A COMMERCIAL GEOGRAPHY

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EXPLANATION:
Red names show Exports.
Red lines on water, show Steamer Routes.
Brown lines on water, show Sailing Routes.
Red lines on land, show Railroads.
Black lines on land, show Caravan Routes.
Black dotted lines show Submarine Telegraph Cables and their connections.
Steamer & Railroad Routes are divided so as to show distances passed over every 5 days by fast Steamers and Trains, thus:
SEA COLORING:
Seas open to Navigation throughout the year.
Seas filled with Ice in Winter, and only open to Navigation in Summer
Seas always covered with Ice.
Unexplored Polar Regions are left White.
LAND COLORING:
Regions at present engaged in International Commerce.
Regions capable of Commercial Development, but at present undeveloped.
Regions open to Commercial Enterprise only during Summer months.
Barren and Desert Regions incapable of Commercial Development.
ARCTIC OCEAN
ATLANTIC OCEAN
PACIFIC OCEAN
INDIAN OCEAN
NORTH AMERICA
SOUTH AMERICA
EUROPE
ASIA
AUSTRALIA
EQUATOR
TROPIC OF CANCER
TROPIC OF CAPRICORN
ARCTIC CIRCLE
Longitude from Greenwich
East 180 150 120 90 60 30 0 30 60 90 120 150
West 180 150 120 90 60 30 0

REFERENCE CHART OF THE WORLD'S RESOURCES, PRODUCTIONS, AND TRADE.

A COMMERCIAL GEOGRAPHY

FOR ACADEMIES, HIGH SCHOOLS
AND BUSINESS COLLEGES

BY

JOHN N. TILDEN, M.A., M.D.

AUTHOR OF "A GRAMMAR SCHOOL GEOGRAPHY"

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PREFACE

A LARGE proportion of boys in schools expect to enter business life. Comparatively few have opportunity for the extended training given by a college course, and must depend upon the academy, the high school, or the commercial school for their preparation. The problem is to give boys, having a limited time at their command, the training and knowledge that will be of the greatest practical value in a commercial life. A good knowledge of what are known as fundamental branches is necessary; but, beyond these, it has been difficult to decide what branches of instruction will prove of greatest practical service. Political economy, civics, physics, chemistry, history, and the modern languages are helpful toward training the mind; but, if the languages be excepted, the branches named do not directly give the practical results that are so much needed.

If some facts bearing upon the active commercial questions of the day could be brought within the scope of a text-book, it would seem to supply a want. Among these questions are, the routes and growth of commerce, — the production-centres and the markets of the world, — waterways and railways, and the increase of commerce as related to the growth of cities. The staple articles of commerce, their relative value and importance, would also deserve attention.

With a view of partly, at least, fulfilling this object, I have prepared this text-book of Commercial Geography. The need of such a book has been felt in this Academy, and it is hoped that other academies and schools may find it useful in giving boys some ideas of the magnitude of the world's production, in showing the interdependence of nations for the necessities as well as the luxuries of life; and in presenting many facts of practical value relating to commerce.

While Commercial Geography deals mainly with the interchange of commercial products, it is also essential that the student should know something about the countries and localities where the raw materials are found, how the latter are obtained, what the processes of manufacture are, how interchange is effected, and what ratio home consumption bears to export. All these are important questions, that must be studied if practically useful knowledge is to be assimilated.

A due sense of perspective has dictated that the staple commodities which direct the world's commerce should receive that greater share of attention which would be impossible were any exhaustive treatment of the countless products of many lands to be attempted. The salient and vital facts which concern man's activities are, after all, but few in number.

The merely geographical order, which is necessary in treating of the physical and political aspects of the countries of the world, has here yielded place to a treatment of them in the order of the importance of their existing commerce *with the United States*. The industries and commerce of our own country receive, for obvious reasons, much fuller consideration than is given to those of any other country; and following this chapter, in their order, are the chapters on Great Britain, Germany, France, Spain, etc. In each of these the colonies and the home country are appropriately brought together.

To teachers using this book, I would recommend frequent reference to descriptive geography, and the bringing to the notice of classes, articles from the current press bearing upon commerce, the chief productions of the world, and allied topics.

Brief, but comprehensive review chapters on mathematical, physical, and descriptive geography are given, so that the foundation-work for the study of Commercial Geography may be well laid.

In connection with the text, and in smaller type, are presented interesting details, containing information, not so much for memorizing, as to illustrate the current lesson. This feature, serving as it does to separate the essential from the non-essential, will at once commend itself to the class-teacher.

I am indebted to Dr. Jacques W. Redway, geographer and author, for the chapter on physical geography, and for useful suggestions in preparing this book for the press.

J. N. T.

PEEKSKILL, NEW YORK,
September, 1895.

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NOTE UPON THE REFERENCE CHART.

To the Teacher:

The Chart with which this book opens has been prepared as a supplement to the maps that are interspersed in the text, in order to afford in one view a comprehensive idea of the world's commercial activities, and especially for purposes of reference in the study of international as distinguished from internal trade.

The Chart having been examined, and explained in the light of the color-key which accompanies it, certain general features will at once suggest themselves, upon which oral instruction may from time to time be given.

The devices of coloring are such as to make it plainly apparent —

1. That man's activities as a whole are largely determined for him by his physical surroundings: thus:

2. That his labors in production are mainly restricted to the land surface of the globe; that is, to about one-fourth of its area;

3. That this fourth lies mainly in the Northern Hemisphere;

4. That man's energies are further limited by temperature, this in turn depending upon altitude as well as latitude, and modified by trade-winds and ocean currents;

5. That the most active industries are as yet confined to about one-seventh of the earth's land surface, lying in the temperate zones of Europe and North America; and

6. That the latitude of this field is higher in Europe than it is in America.

The people of the world seeking fertile lands and easy means of communication have found both in the great river-basins, as in China, India, Egypt, and our own Central States. The rich soil of these great basins is the deposited washings from the higher lands. These higher lands accordingly tend everywhere to become less and less productive. The Amazon basin has climatic conditions which, though favorable to vegetable life, unfit it to be the seat of an industrial civilization. Hence it is but thinly peopled. In another equatorial land, that of the upper Congo, the conditions are far better, owing to altitude and a more even distribution of rainfall. In this newly explored area a dense savage population is already giving way before the encroachments of Europeans.

The amount and regularity of rainfall is everywhere a condition upon which food production largely depends. The regions of Africa, Australia, and southwestern Asia shown in white upon the Chart are desert and unproductive mainly because they are rainless.

Such questions as:

Why is the interior of the Australian continent undeveloped ?

What region of Asia is naturally rich, but backward in international trade, and why ? of Africa ? of South America ? of Canada ?

What reason can you give why maritime commerce had its beginnings in Southern Europe ?

On what ocean is commerce most active, and why ?

Where are the principal railway systems of the world ?

In what grand divisions are the great manufacturing centres ?

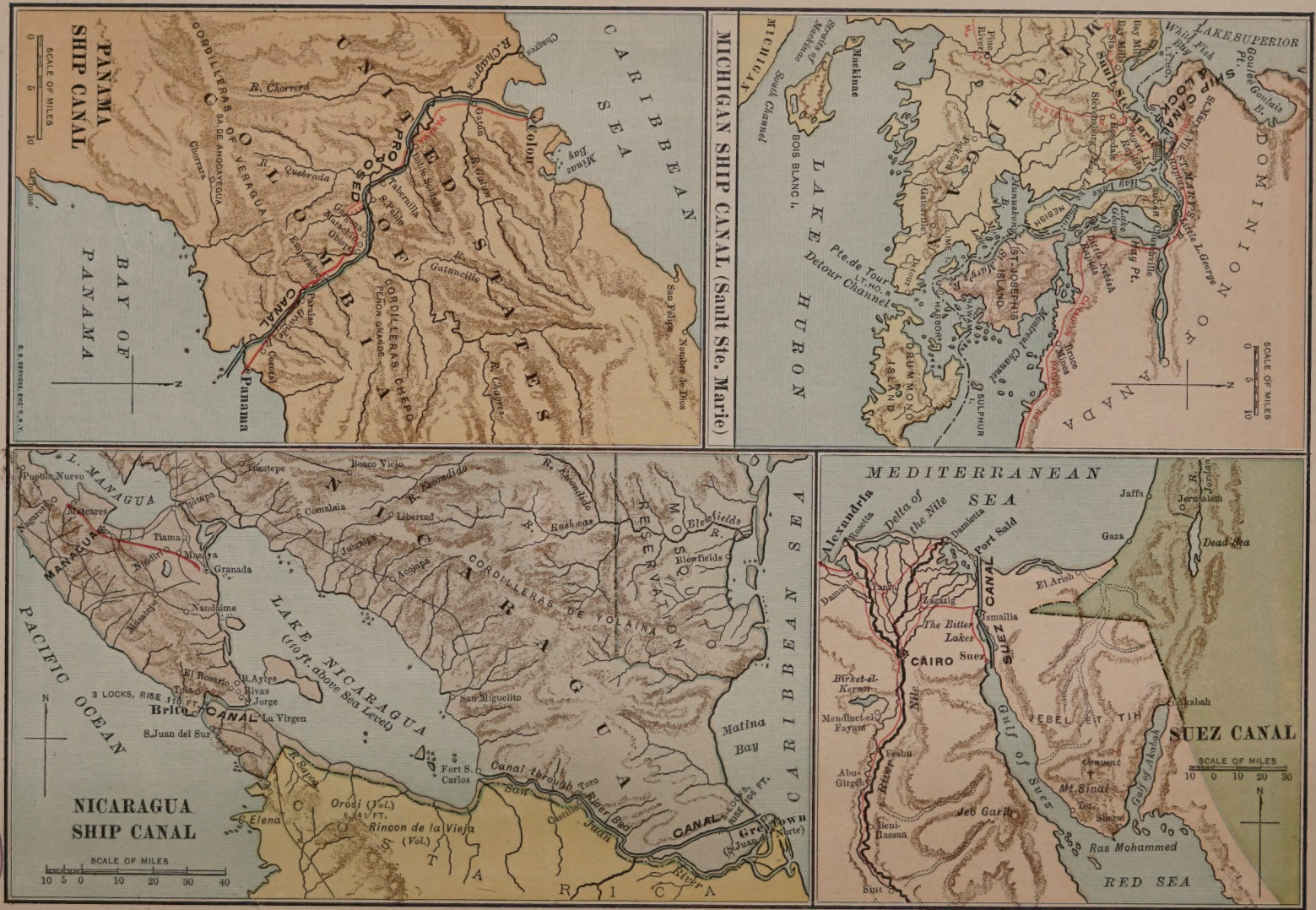
Locate the principal agricultural areas of the Northern Hemisphere:

These and the cognate questions which they will suggest must excite in the minds of students that interest which is everywhere the best aid to good teaching.

At the several stages of progress General Reviews, as a test of the pupil's acquirement, should be founded on this Chart to show [1] what and where the principal natural resources of the world are; [2] what the great raw staples are, whence they are derived, and where, and for what manufactured products they are exchanged, and [3] what proportion of trade, when considered by countries, is domestic, foreign, by land, by water.

The subject of Commercial Geography readily lends itself to such supplementary discursive treatment as can, in the judgment of the teacher, be suitably given to it at the successive stages. For the life of man, everywhere and at all times, has a direct bearing and dependence upon production and trade. We have as yet but touched upon the possibilities of production. The science that has restocked exhausted fishing-grounds in river, lake, and bay, will one day teach us to levy at will upon the inexhaustible food-supply of the deep seas. The science which long since prescribed the rotation of field-crops is already busy with the reclamation of desert lands by forestry and irrigation. Science, utilizing the wondrous fecundity of animate nature, enables us to multiply beeves, while flesh-eating animals, our rivals for this kind of food, are exterminated; and teaches us to plant trees for fruit and shade where our ancestors with less forethought felled them for firewood.

While in our rapidly progressive time the human family is ever acquiring greater mastery over the stores and forces of nature, it is interesting, and not profitless, to note and consider the daily steps of this progress, and even to speculate upon the industrial future of the race.



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See pages 35, 36, 37, 59, 60, 93, 106, and 153.

INTRODUCTION

CONDENSED REVIEW OF MATHEMATICAL, PHYSICAL, AND POLITICAL GEOGRAPHY

GEOGRAPHY is a description of the earth, its surface, inhabitants, and productions.

Mathematical Geography treats of the earth in its form, size, and motions, of the methods of measuring its surface, and of the ways in which the surface is represented.

Physical Geography is a description of the earth's surface, of its plants, animals, and minerals, of the land, the currents of the ocean, the winds, and the climate.

Political Geography is a description of the nations of the world, the people of those nations, their occupations and their forms of government.

Commercial Geography treats of the resources and productions of the earth, and of their distribution, of the routes of commerce, and of markets and manufactures.

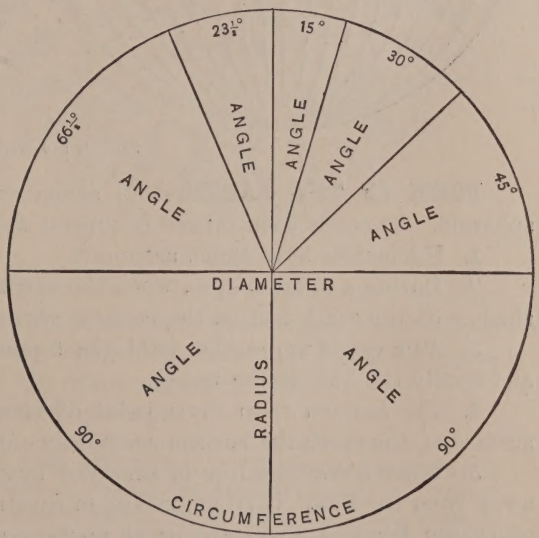
MATHEMATICAL GEOGRAPHY

A circle is a plane figure bounded by a curved line, every point of which is equally distant from the centre.

A circumference of a circle is the curved line that bounds it. The circumference is itself often called a circle.

A diameter of a circle is a straight line which passes through its centre, and terminates at opposite points of the circumference.

A radius of a circle is a straight line drawn from the centre to the circumference.



The Circle and its Parts — Angles

Every circle is divided into 360 equal parts, called *degrees* (°). Degrees are subdivided each into sixty *minutes* (′), and each minute into sixty *seconds* (″), or one-thirty-six hundredth of a degree. One-fourth of the circumference of a circle is an arc of 90°. Such an arc is subtended by a right angle. An angle is measured by the number of degrees in the arc that subtends it.

A sphere is a body bounded by a curved surface, every point of which is equally distant from a point within called the centre.

A hemisphere is half a sphere.

A diameter of a sphere is a straight line passing through its centre, and terminated by its surface.

The axis of a sphere is the diameter on which it may be supposed to revolve.

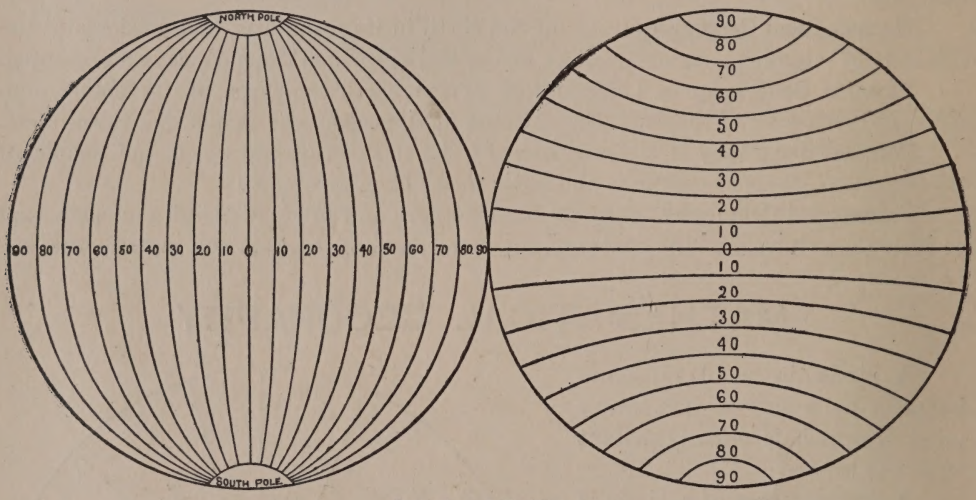
The poles of a sphere are the extremities of its axis.

A spheroid is a body nearly spherical.

An oblate spheroid is produced when a spheroid is flattened at the poles.

A great circle of the earth is one that divides it into two equal parts.

A small circle is one that divides the earth into two unequal parts.



Parallels and Meridians.

FORM OF THE EARTH. — In shape the earth closely resembles an oblate spheroid. This has been proved in several ways.

1. Navigators have sailed around it.

2. During a lunar eclipse, when the earth is between the moon and the sun, the shadow of the earth cast on the moon is always circular.

3. As a vessel approaches land, the topmast is first seen, then the lower sails, and finally the hull of the vessel.

4. The horizon from every point of view is circular. In ascending from the surface of the earth the horizon constantly enlarges.

5. When a straight line is surveyed upon any plane surface, the earth curves away from the line. Civil engineers, in constructing ditches and canals, must make allowance for this curvature, or at no very great distance excavations would run out at the surface of the earth. At the distance of one mile the curvature is eight inches, at two miles thirty-two inches, at three miles seventy-two inches.

RULE: *Square the distance in miles. Two-thirds of this is the curvature in feet.*

SIZE OF THE EARTH. — The **diameter** of the earth is nearly 8,000 miles. The polar diameter is about twenty-six miles shorter than the equatorial diameter.

The circumference of the earth is nearly 25,000 miles.

The area of the earth is about 197,000,000 square miles.

The distance from the earth to the sun is about 92,000,000 miles. It is estimated to be about 93,000,000 miles in summer, and 90,000,000 in winter.

MOTIONS OF THE EARTH. — The earth has two motions. It rotates on its axis, causing the succession of day and night. This is called the *daily* or *diurnal* motion. The earth moving in its orbit, or path around the sun, completes a *revolution* in about 365¼ days, a period called a year. This is the earth's *yearly* or *annual* motion.

DIRECTIONS ON THE EARTH'S SURFACE. — The earth's axis points to a star called the north or pole star. The pole of the earth nearest this star is the north pole; the opposite pole is the south pole. Every direction from the north pole is south, and every direction from the south pole is north.

North is the direction along the earth's surface towards the north pole. South is the direction towards the south pole. Facing the north, the direction on the right hand is east; that on the left hand, west. These four points are called the *cardinal points.*

Midway between north and east is northeast; between south and east is southeast; between north and west is northwest; between south and west is southwest. These are called *semi-cardinal points.*

Mariner's Compass.

For ascertaining directions at sea an instrument called the mariner's compass is used. It consists of a circular card, on which are marked the cardinal points, with their twenty-eight subdivisions, and to which is attached a magnetic needle. The needle, balanced on a pivot so as to swing freely, indicates the direction of the north and south poles.[1]

To "**box a compass**" is to name its points in order.

---

[1] The compass-needle does not point exactly north and south. At different localities it varies from a few minutes of arc to more than ninety degrees. Along the Atlantic coast of the United States the variation does not exceed eight or ten degrees west of north; along the Pacific coast it varies from fifteen to twenty degrees east of north. Along a line drawn from Savannah, Ga., to Detroit, Mich., the variation is almost nothing; midway between New York and Liverpool it is nearly thirty-five degrees west.

The Chinese were familiar with the properties of the lodestone from very early times, but the magnetic needle was little known to Western nations till the fourteenth century. Before that time

CIRCLES OF THE EARTH. — Circles of the earth are imaginary lines passing around it. On maps and globes they are real lines.

The equator is a great circle passing east and west around the earth at a distance midway from the poles. It divides the earth into northern and southern hemispheres. The equator passes through Brazil, Colombia, Ecuador, Celebes, Borneo, Sumatra, Zanzibar, Soudan, and Lower Guinea.

Parallels are small circles parallel to the equator. They mark distances north or south from the equator.

Meridian circles are great circles passing through the poles of the earth and are perpendicular to the equator. They mark distances east or west of some meridian taken as a standard.

A meridian is half a meridian circle, and terminates at the poles.

The ecliptic is a great circle passing around the earth, making an angle of $23\frac{1}{2}°$ with the equator.

As the earth turns on its axis from west to east, one-half its surface is illuminated at one time by the sun. The boundary line of the illuminated portion is called the *circle of illumination*, or *day circle*. It is therefore a great circle, and moves from east to west as the day advances.

The Tropic of Cancer is a small circle, $23\frac{1}{2}°$ north of the equator.

The Tropic of Capricorn is a small circle $23\frac{1}{2}°$ south of the equator.

The Arctic Circle is a small circle $23\frac{1}{2}°$ from the north pole.

The Antarctic Circle is a small circle $23\frac{1}{2}°$ from the south pole.

The distance of the Arctic circle from the equator is 4,605 common miles.

LATITUDE AND LONGITUDE. — The location of a place on the earth's surface is determined by its distance from two fixed lines perpendicular to each other. The equator is taken as one of the lines; a standard meridian as the other.

Latitude is distance north or south of the equator, measured in degrees, minutes, and seconds. Places are in north or in south latitude according as they are north or south of the equator. Places on the equator have no latitude.

The length of a degree of latitude is 60 geographical or nautical miles, and averages about 69 common or statute miles.

The length of a degree of latitude varies. The flattening of the earth at the poles causes the length of a degree to increase as we go from the equator toward the poles. The length of a degree of latitude varies, therefore, from 68.7 to 69.4 statute miles.

All places situated on the same parallel have the same length of day.

Longitude is the distance (in degrees, minutes, and seconds) east or west of an established meridian. The longitude of any place on the prime meridian is 0.

Longitude is measured 180° east or west of the prime meridian.[1] The prime

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the most extended voyages made by European sailors were those to the East Indies, around the Cape of Good Hope. To a great extent, these were coastwise voyages; but with the introduction of the mariner's compass navigators were able to make bolder ventures, and the great historic ocean voyages of discovery speedily followed. The improved chronometer now carried by all sea-going ships has also greatly contributed to the precision and safety of modern navigation.

[1] For the convenience of navigators and astronomers, the custom of estimating longitude from 0° to 360° E., instead of 180° E. or W., is becoming very common.

meridian — that of Greenwich — is the meridian from which longitude is now almost universally reckoned.

From the equator, where the length of a degree of longitude is 69.164 miles, the degree lessens in length to the poles, where the value becomes zero. It is seen that the spheroidal form of the earth causes the length of a degree of longitude to depend upon the latitude.

A degree of longitude at the equator measures 69.164 miles.

At lat. 5° . . 68.901 miles	At lat. 35° . . . 55.714 miles	At lat. 65° . . 29.319 miles
" 10° . . 68.117 "	" 40° . . 53.053 "	" 70° . . 23.725 "
" 15° . . 66.821 "	" 45° . . 48.982 "	" 75° . . 17.957 "
" 20° . . 65.014 "	" 50° . . 44.545 "	" 80° . . 12.049 "
" 25° . . 62.718 "	" 55° . . 39.760 "	" 85° . . 6.048 "
" 30° . . 59.947 "	" 60° . . 34.669 "	" 88° . . 1.211 "
	At lat. 90° . . 0.0 miles.	

ZONES. — A zone is a belt or girdle. The tropics and polar circles divide the earth's surface into five zones.

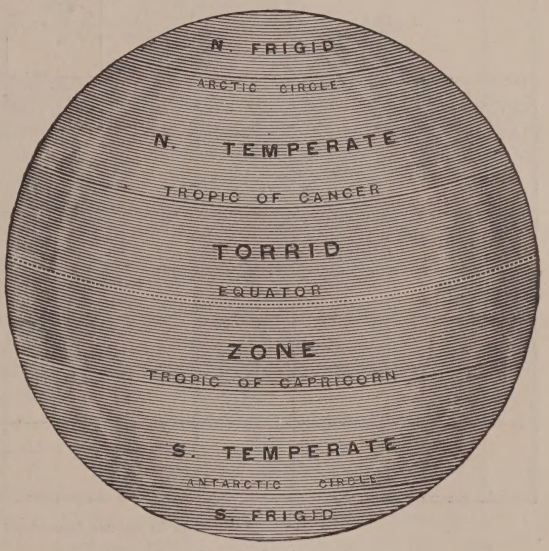
The Torrid Zone lies between the tropics. It is 47° wide.

The North Temperate Zone lies between the Tropic of Cancer and the Arctic Circle. It is 43° wide.

The South Temperate Zone lies between the Tropic of Capricorn and the Antarctic Circle. It is 43° wide.

The North Frigid Zone extends from the north pole to the Arctic Circle. It is $23\frac{1}{2}$° wide.

The South Frigid Zone extends from the south pole to the Antarctic Circle. It is $23\frac{1}{2}$° wide.



Zones, Tropics, etc.

SEASONS. — In each of the Temperate zones there are four seasons, — spring, summer, autumn, and winter. The change of seasons on the earth is caused by the revolution of the earth about the sun, the rotation on its axis, the inclination of the axis to the plane of the ecliptic, and the constant parallelism of the earth's axis to itself.

If the earth had motion in its orbit alone, there would be but two seasons, — summer and winter. If the earth's axis were perpendicular to the plane of the ecliptic, there would be no change of seasons. If the earth's axis were in the plane of the ecliptic, there would be two summers and two winters in the equatorial regions, for each passage of the earth throughout its orbit.

It will be seen that the two motions of the earth and the inclination of its axis to the plane of the ecliptic, together with the unchanging direction of the axis, are the causes of the four seasons of the Temperate zones.

The seasons of the Temperate zones are not all of the same length. This is due to the elliptical form of the earth's orbit. The earth is distant from the sun about 93,000,000 miles in summer, and about 90,000,000 miles in winter. In the North Temperate Zone, spring has ninety-three days; summer, ninety-three days; autumn, ninety days; and winter, eighty-nine days.

The summer days increase in length as we go from the equator toward the poles. The following table exhibits the length of the longest day in the different latitudes: —

At the Equator . . 12 hours	Lat. 40° . . . . 15.0 hours	Lat. 67½° . . . . 1 month
Lat. 10° . . . . 12.7 "	" 45° . . . . 15.6 "	" 69½° . . . . 2 months
" 20° . . . . 13.3 "	" 50° . . . . 16.3 "	" 73.3° . . . . 3 "
At the Tropics . . 13.5 "	" 55° . . . . 17.3 "	" 78.3° . . . . 4 "
Lat. 30° . . . . 14.0 "	" 60° . . . . 18.7 "	" 84° . . . . 5 "
" 35° . . . . 14.5 "	At the polar circle . 24.0 "	At the north pole . 6 "

The World on Mercator's Projection.

GLOBES AND MAPS. — The earth's surface is usually represented by globes and maps.

A terrestrial globe is a small sphere, the surface of which represents the surface of the earth.

A map is a representation of the whole or of a part of the earth's surface on a plane.

A map projection is a method of representing the earth's surface on a plane.

Mercator's projection is a method of map-drawing for the use of navigators, to whom the relative position of points on the land and the sea is of greater importance than the contour of the coast-line. On Mercator's maps the meridians and parallels are represented as at right angles to one another.

A scale of miles furnishes a unit of comparison for distances as shown on the map and for the corresponding actual distances on the earth's surface. A scale of miles cannot be used on either a Mercator's projection or an ordinary map of a hemisphere, inasmuch as such maps are distorted in all parts except along the equator. Most of the maps in atlases are drawn on a conic, polyconic, or Bonne's projection. A scale of miles is fairly accurate on any one of these.

The parallels of latitude are numbered on the side margins of maps. The meridians of longitude are numbered at the top and the bottom margins.

The day conventionally begins at 180° longitude, and this meridian is the one from which every date is reckoned. The first day of the week, Sunday, is reckoned from this meridian. It is Sunday east of the meridian 180°; it is Monday west of it. In sailing westward a day is lost, and in sailing eastward a day is gained. Navigators, therefore, make the necessary correction to avoid confusion in keeping their log-books. Formerly, an arbitrary line was used, called the Sunday line, or international date line; but its use has been given up by navigators, and that of the exact meridian, the 180th, has been adopted.

QUESTIONS

Define the term geography. What is physical geography? — mathematical geography? — political geography? Define the term commercial geography.

Name the various parts of a circle, and describe them severally. How many degrees in a half circle? — in a quadrant? How many degrees in the arc extending from the horizon half way to the zenith?

Name the various parts of a sphere, and describe them. Which circles of the earth are flattened, and therefore mathematically imperfect? [*Ans.* — All those whose direction is north and south.] Which circles of the earth are perfect circles? [*Ans.* — All those whose direction is east and west.] What is a great circle? [*Ans.* — A great circle of the earth is one that divides it into equal parts.] How else may it be defined? [*Ans.* — As any circle in whose plane lies any diameter of the earth.] Which of the east and west circles of the earth is a great circle?

What is the form of the earth? How is it known that the earth is an oblate spheroid?

What is the earth's diameter? — circumference? — area? — distance from the sun?

What is the diurnal motion of the earth? — the annual motion?

What is the mariner's compass? What does it show? For what is it used? What is meant by "boxing the compass"?

What is the equator? What are the parallels? What are meridian circles? — meridians? What is calculated from meridians? What from parallels? Name and define other important circles of the earth.

What is latitude? — longitude? What places are in latitude 0°? What can you say of the width of a degree of latitude? — of the length of a degree of longitude?

How many zones are there? Name and define them.

How many seasons are there in the North Temperate Zone! How is the change of seasons caused?

By what means is the surface of the earth ordinarily represented? What is Mercator's projection?

What meridian of longitude is frequently used for reckoning the beginning of the day?

What points on the earth's surface are nearest the centre of the earth? [*Ans.* — The poles.] What is the greatest longitude a place can have? [*Ans.* — 180°.] What places are in longitude 0°? What is the basis of a geographical mile? [*Ans.* — One minute of longitude at the equator.]

Given the longitude of any two places, how do we reckon the difference in time? [*Ans.* — Since the earth rotates upon its axis in twenty-four hours, and since its girth has 360 degrees of longitude, it is plain that 15 degrees of longitude are equal to one hour of time ($360 \div 24 = 15$), and that one degree of longitude is equal to four minutes of time, and one minute of longitude is equal to four seconds of time. Multiplying the difference in degrees of any two places by four must, therefore, give us the difference of time stated in minutes.]

PHYSICAL GEOGRAPHY

Ever since the first land appeared above the waters that once covered the whole earth, the surface has been undergoing great changes. The fitting of the outer crust about a shrinking interior has thrust it in places high above the sea, raising it into plateaus, and wrinkling it into mountains and valleys. As soon as the first mass of land was lifted above sea-level the waters of the atmosphere began to wear it away and carry the detritus back to the ocean. Frost and heat have crumbled the rocks at their surface; glaciers have rounded off the tops of the mountains, or scored their slopes with deep furrows. Rivers have worn deep cañons into their beds in one place, and have spread the scourings about their lower courses, — filling up depressions, and levelling them into broad plains. Turn our eyes in whatever direction we may, there is no part of the earth's surface that has not been worn and changed by the action of the water; and the same forces that were in operation when the North American continent rose out of the sea are still as active as they were then.

Physical Geography, or **Physiography,** is the study of earth-sculpture; and if we are willing to read attentively nature's writing on the leaves of the great stone book we shall find that not only is the distribution of life on the earth governed by the laws of physiography, but that every human industry is also rigorously controlled by these laws.

An elevation of the Atlantic coast plain of the United States one hundred feet in extent would destroy nearly every harbor along the coast, and at once crush the commercial supremacy of this region. A slight change in the direction of the winds might reduce the rainfall of the Mississippi valley one-half, and thereby render it valueless as a grain-producing region. If the mild winds that carry warmth and moisture to Europe were changed so as to blow towards the northwest instead of the northeast the climate of Labrador peninsula would become as mild as that of Virginia, while western Europe would soon be shrouded in ice. The building of the Erie canal wrested the commercial supremacy from Philadelphia, and transferred it to New York; but the canal could not have been made were it not for the natural gap through which Mohawk River flows. So, if we look closely, we shall find that every commercial enterprise prospers or fails according as it obeys or disobeys natural laws, and that human activities can be intelligently directed only by means of a knowledge of these laws.

The study of physical geography may be divided into three parts, — that of the land, that of the water, and that of the atmosphere.

The entire surface of the earth aggregates about 197,000,000 square miles. About three-fourths of the surface, 144,000,000 square miles, is covered by water. The portion not so covered, 53,000,000 square miles in extent, is land.

THE LAND

According to extent, the land is divided into continents and islands; and the surface of each may be diversified by plateaus, mountains, valleys, and plains.

CONTINENTS. — A continent is the largest natural division of land. Three continents are usually recognized, — the Eastern (or Eurasian), the Western, and the Australian.

The Eastern Continent consists of the grand divisions of Europe, Asia, and Africa. It embraces more than half the land of the globe.

The Western Continent includes the grand divisions of North America and South America. Its length from north to south is nearly 10,000 miles.

The Australian Continent includes Australia and Tasmania, the two being separated by a very shallow, island-dotted strait.

The two larger continents are bordered each by chains of islands situated at no great distance from their shores. These, because of the similarity of their structure to the continents near which they lie, are generally regarded as parts of the continents themselves.

ISLANDS. — An island is a body of land entirely surrounded by water. Islands differ from continents not only in size, but in many instances they differ in structure also. They are conveniently classified as *continental* and *oceanic.*

Continental islands are so called because of their similarity of structure to the continents near which they lie. They are usually long and narrow in shape,[1] and their surfaces are commonly mountainous or rugged. In many instances they lie parallel to the coast, or else extend in a long chain in line with a projecting peninsula. The Aleutian Islands, the West Indies, and the chain bordering the eastern coast of Asia, are examples.

Continental islands are usually the higher crests of partly submerged mountain chains.

Oceanic islands are situated at a considerable distance from any large body of land. In a few instances they are isolated, and usually they are small in size. Generally they are rugged masses of volcanic rock rising precipitously above the surface of the water. St. Helena, Jan Mayen, the Bermudas, and Ascension Island are examples.

By far the greater number of oceanic islands, however, are found in the Pacific Ocean. Here they are ranged in chains having a northwest and southeast trend, and in nearly every instance they are covered with growths of coral. These islands appear to be mountain-ranges rising from the surface of a submarine plateau.

An archipelago is a cluster of islands. The group of islands in the Ægean Sea and that north of North America are examples.

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[1] Such chains of islands should not be confounded with the low spits that border coast plains, and that are situated at no great distance from the latter. Islands of this character are formed by the action of rivers which carry their sediment to the sea, and by the waves which push back the sediment shoreward.

FORMS OF COAST. — A coast is the land bordering on the sea, or on any other large body of water. A shore is the line where the land and water meet.

A cape is a point of land extending into the sea. Small peninsulas are sometimes called capes, as, for instance, Cape Ann and Cape May.

A promontory is a high, rocky cape. Gibraltar, Point Conception, and Cape of Good Hope are examples. Promontories furnish good locations for lighthouses. This is especially true when the promontory is at the angle of a sharp bend of the coast.

The terms *hook*, *bill*, *head*, *point*, *mull*, *naze*, and *nose*, are also used to designate capes, as — Sandy Hook, Portland Bill, Dunnet Head, Point Barrow, Mull of Kintyre, the Naze, the Nose, etc.

A peninsula is a body of land extending into the sea and nearly surrounded by water. Florida, Italy, and Lower California are examples.

An isthmus is a narrow neck connecting two larger bodies of land. The Isthmus of Panama is an example.

The sand-bars formed along the coast by the combined action of waves, currents, and tides are called *spits*. In form a spit may be a cape, a long and narrow island, a peninsula, or a "hook." Sandy Hook, on the coast of New Jersey, is an example.

RELIEF FORMS OF LAND. — The surface of the land is diversified by plateaus and plains, mountains and valleys, hills and dales.

A plateau is any high surface of considerable extent. It may be level, or rugged, or mountainous. The region west of the Missouri River, called the Plains, is a plateau. Mexico is a plateau, and the vast area surmounted by the Himalaya and Kuen-Lun mountains is also an excellent example.

Small, flat-topped plateaus are commonly called *table-lands*, or *mesas*.

A plain is a level, or nearly level, tract of land at no great elevation above the sea. Siberia and Russia form a vast plain. The central part of North America and of South America are also examples.

Plains are variously named. In the central United States they still retain the name *prairies* given them by the early French explorers. Along the south Atlantic coast they were formerly called *savannahs*, a name still perpetuated in a city of Georgia. In South America the plains of the Orinoco are called *llanos;* the forest-covered basin of the Amazon, *silvas;* and the grassy plains of La Plata (Plate) River, *pampas*.

There is no dividing-line of elevation between plateaus and plains. In popular use the quality of levelness is usually associated with plains, whether high or low.

In physical geography plains are sometimes designated by such features as describe their origin or formation. Thus, a *coast-plain* is one formed of the detritus brought down from the steep slopes of mountain-ranges, and deposited along the shores of the sea. The Atlantic coast-plain is an example. A *marine plain* is an old sea-bed that has been elevated above sea-level. The upper part of the Mississippi valley is an example. An *alluvial plain* is one that has been formed by the deposition of silt from flowing water. Alluvial plains, of which the lower Mississippi valley is an example, are situated along the courses of rivers. A *flood-plain* is that part of a river-valley that is covered at times of very high water. The bottom-lands of the Mississippi are an example.

A mountain-range is a fold or wrinkle in the strata which form the outer layers of the earth's crust.

Sometimes the range consists of a single fold; in some instances, as in the Jura Mountains, there are several folds; in still others, as in the Alps, there is a complex crumpling of strata.

In many instances the upper layers of the fold have been worn away, leaving a series of parallel upturned edges. The Appalachian Mountains are an example, the ranges of which, in nearly every case, are ridges formed by the unequal wearing of the upper strata.

The highest part of a mountain-range is called its *summit*, or *crest;* any part of the crest considerably higher than the average elevation of the range is a *peak;* the hilly country at the base of a range is called the *foothill*, or *piedmont region.*

A mountain system embraces all the ranges and ridges belonging to the same elevation. Thus, the western highlands of North America form the Rocky-Mountain system.

A valley is the depression between parallel ranges or ridges. The Shenandoah valley in Virginia, and the Sacramento-San-Joaquin valley of California, are examples.

A transverse valley — that is, a valley crossing a range — is called a *pass*, or *gap.* Fremont Pass in the Rocky Mountains, and Delaware Water-gap, are examples. Passes and valleys having precipitous sides are usually called *cañons.*

Passes and gaps are of the greatest importance commercially, from the fact that they afford the only feasible locations for railways, canals, and other routes of transportation. The commercial supremacy of New York City is due in no small degree to the Mohawk Water-gap. Khyber Pass in Afghanistan is the key to the door between India and Europe. For want of another Brenner pass, several European railway companies have been compelled to tunnel the Alps in order to reach Italy.

A divide is a ridge of land that separates adjacent river basins. Thus, the Height of Land in Minnesota separates the Mississippi from rivers that have Arctic drainage. A divide is sometimes called a *watershed.*[1]

There is a prevalent belief that mountain-ranges are always important divides. This is seldom the case. The Appalachian, Rocky, and Himalaya mountains are each pierced by large rivers which flow through the entire mountain mass. The explanation lies in the fact that the rivers are older than the mountain-ranges, and while the latter were being elevated, the former deepened their channels just as rapidly.

A basin is the territory drained by a river or by a lake, each with its tributaries.

A volcano is an opening in the earth's crust, from which steam, various other gases, and molten rock are ejected.

In most instances the ejected material forms a cone-shaped mountain, which is also called a volcano. At the top of the volcanic mountain there is usually a cup-shaped depression called the *crater.* In some instances the crater is a deep pit in

[1] In engineering science a watershed is not a divide, but the area or basin drained by a river.

a high plateau. With few exceptions volcanoes are situated near the sea or one of its arms.

Volcanic *ashes* consist of lava so finely divided that it may be blown a long distance with the wind. The alleged *smoke* of an eruption is merely a dense cloud of steam, while of fire or flames there are none. Nearly all the sulphur of commerce is obtained from the craters of volcanoes, and the greater part of the borax used in the arts is obtained from the hot mineral springs which are found in volcanic regions.

Elevations of land are measured from mean tide sea-level.

The highest peak of the United States is probably Mount St. Elias, 19,500 feet. The crests of the Rocky-Mountain system vary between 10,000 and 14,000 feet. Most of the Great Central Plain is less than 1,000 feet high. The greater extent of the Appalachian system is less than 2,000 feet high. The highest peak on the earth is probably Mount Everest, 29,000 feet in altitude. The crest of the Himalaya Mountains varies between 20,000 and 29,000 feet.

The deepest known depression below sea-level is the Ghor in Asia Minor. Lake Tiberias is over 600 feet, and the surface of Dead Sea 1,300 feet, below sea-level. The Caspian Sea is the lowest part of the largest depression known. Its surface is 84 feet below the ocean. There are several small depressions in Africa, and a number in the United States. In the latter the principal ones are Death Valley and the sink of San Felipe, both of which are in California. Nearly one-third of The Netherlands has been reclaimed from the sea.

A desert is a rainless region, or one in which the rainfall is insufficient to support more than a scanty vegetation. In nearly every desert there are small areas watered by springs, and therefore fertile. Such spots are called *oases*.

A desert is barren for lack of water only. The surface may be level, or rugged, or mountainous. Vegetation is limited to a few species of plants, or it may be absent altogether. For want of it the surface soil is always more or less pulverized, and shifting dunes are commonly a marked feature of desert regions. For this reason there has arisen the prevalent belief that the soil of deserts is sandy. As a matter of fact, true sand is of rare occurrence in them. Because of the absence of water and vegetation, a desert region of considerable extent is a greater impediment to commerce than a high and rugged mountain-range.

THE WATER

Water covers about 144,000,000 square miles of the earth's surface, — nearly three-fourths of the whole. A small portion of this consists of small bodies of fresh water resting in depressions of the land, or flowing in channels over the surface. The great body of salt water above the surface of which the continents rise is called the Sea.

DIVISIONS OF THE SEA. — For convenience the sea is divided into five oceans. The arms of the latter are seas, gulfs, bays, straits, and sounds.

An ocean is the largest natural division of the Sea. The five oceans are: the Pacific, Atlantic, Indian, Antarctic, and Arctic.

A "sea" [1] is a nearly land-locked arm of an ocean. The Mediterranean, Black, and Red seas are examples.

A gulf or **bay** is an arm of an ocean extending into the land. Hudson Bay and the Gulf of Mexico are examples.

A small bay is called a *bight*. A very wide river-mouth formed by the action of tides is an *estuary*, as, for instance, Delaware Bay. An inlet nearly cut off from the sea by bars or spits is sometimes called a *lagoon*. A deep bay formed in rocky shores by the action of ice is sometimes called a *fjord*. There is no particular distinction between the terms *gulf* and *bay*.

A strait is a narrow passage that connects two larger bodies of water. Bering Strait and the Strait of Gibraltar are examples.

This word is also commonly used in the plural number; both the Strait of Gibraltar and Florida Strait are frequently spoken of as "the Straits." A wide passage of no considerable length is usually called a *channel*. A body of water between a chain of islands and the mainland is often called a *sound*. A strait is also called a *gut*, as the gut of Canso, Hellgate (formerly horll-*gat*, the "whirling" strait), Catte*gat*, etc. The terms *minch* and *belt* are also used.

CIRCULATION OF OCEAN WATERS. — The waters of the Sea are in constant motion. Not only is the surface unceasingly tossed by waves, and blown hither and thither in drifts, but the whole mass of water is in constant circulation.

The agents by which this circulation is effected are *waves*, *currents*, and *tides*. Waves are caused by the winds. They are irregular but constant. Tides are regular and periodical. Currents are regular and constant.

A wave consists of the alternate rising and falling of a mass of water. Most of the alterations of the coast of a body of land are caused by waves. Waves forty or fifty feet high have been observed, but they are of unusual occurrence.

Tides consist of the passage, twice a day, of a wave of water formed by the attraction of the sun and the moon.

The advance of the wave is called the rising or *flood tide;* the recession of the wave, the *ebb tide*. When sun, moon, and earth are in line the tides are unusually high, and are called *spring tides*. When their position forms a right angle the waves are less marked, and are then called *neap tides*. At such times there are theoretically four tides each day, — two caused by the moon, and two by the sun. The latter are not well marked, and are usually disregarded.

The calculation to find the time of high tide at any place is called the *establishment of its port*. High tide at any place occurs fifty minutes later each day. Ordinarily the difference between high and low tides varies from four to six feet, but when the wave enters a V-shaped estuary it may exceed fifty or sixty feet.

OCEAN CURRENTS. — Currents are streams of water flowing through the ocean. They are caused mainly by the heating and consequent expansion of the mass of water in equatorial regions. Their direction is modified by the rotation of the earth, by the winds, and by the position of the continents.

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[1] The use of this term to designate any except the great body of ocean water is unfortunate and confusing. It is also very loosely used. Thus, the Caspian and Aral seas are nothing more than large salt lakes; the Baltic and Adriatic seas are more properly gulfs; while the North Sea can be called a sea only by an effort of imagination.

The Equatorial Current is about one thousand miles broad, and flows westward with a velocity of from twelve to twenty miles a day. To the parting of this current at the eastern angle of South America are probably due the Gulf Stream and the Brazilian Current. It again divides near the eastern shores of the Old World, forming the Kuro Siwo or Japan Current, and the Australian Current.

The Gulf Stream is formed near Florida Strait. Some of the water comes from the Caribbean Sea through the Yucatan Channel; a part comes from the region north of the West Indies through the Santarem Channel; a certain but inconsiderable amount comes from the Gulf of Mexico. No part of the stream, however, flows around the shores of the Gulf of Mexico. Off Jupiter Inlet, Florida, it has a maximum velocity varying from 3 to $5\frac{1}{2}$ miles per hour. North of the Grand Banks it ceases to be a definite current, and its waters spread out into a fan-shaped drift whose motion and direction are governed by the winds.

The Kuro Siwo (black stream), or Japan Current, has neither so large a volume, so high a temperature, nor so great a velocity as the Gulf Stream.

The drift of this stream is pushed against the western shores of North America. Contrary to common opinion, no part of this stream enters Bering Sea.

The Arctic Current consists of two streams, which, emerging from the Arctic Ocean on opposite sides of Greenland, unite near Cape Farewell.

These currents meet the Gulf Stream or its drift off the coast of Newfoundland, and, it is thought, cause the dense fogs prevalent in that region.

A feeble current emerges from the Arctic Ocean through Bering Strait.

The Sargasso Seas are somewhat uncertain areas situated in the regions of calms. Because of the freedom of their waters from disturbance by winds they contain an abundance of aquatic plants.

In other sheltered regions where these plants thrive, great quantities are frequently detached during storms or high winds, and cast ashore. The ashes of the dried plant are the *kelp* of commerce, from which iodine is extracted.

CONTINENTAL WATERS. — Enough water falls on the land yearly to cover it to a depth of nearly four feet.

Some of this sinks into the porous soil, perhaps reappearing in the form of springs. Another part evaporates, and is carried away by the winds.

Most of it, however, collects in channels and, filling depressions, forms lakes and ponds, or else flows back to the sea.

A lake is a body of water resting in a depression in the land. The Caspian Sea and Lake Superior are examples. Small lakes are called *ponds*. Lakes without outlets are usually salt.

Salt lakes derive their salt from the streams and inlets that feed them. The latter dissolve mineral salts from the soil, and the solution flows to the lake. The water evaporates, leaving the salt behind. The Caspian Sea, Dead Sea, and Great Salt Lake are notable examples of salt lakes.

A lake basin is the territory drained by the tributaries of a lake. Thus, the

basin of the Caspian Sea embraces all the territory drained by the Volga, the Ural, and several other rivers.

A river is a large stream of water flowing through the land. It may flow into another river, into a lake, or directly into the sea. Small streams are called *rills*, *rivulets*, *brooks*, and *creeks*. A river which flows into another is called a *tributary*, *affluent*, or *branch*.

The term *creek* was formerly used only of small tidal inlets and estuaries of the ocean. It is so used along the coast of Maine at the present time. The Dutch settlers of New York called such inlets *kills*. Harlem Kill, Arthur (*achtyr* or "after") Kill, and Kill von Kull are examples.

A river basin is the area or territory drained by a river.

A river system embraces the main stream with all its tributaries.

A glacier is a river of ice. It is formed mainly of the snow which has fallen or blown into ravines situated in the region of perpetual snow. The ice-stream flows down the ravine at a rate varying from a few inches to a few feet a day. In polar regions, glaciers are usually vast sheets of ice slowly moving down the slopes on which they lie.

Icebergs are formed when a glacier terminates at the sea. Sometimes they are detached masses of ice that fall from a protruding glacier; but in general the end of the glacier, pushed to some distance into the sea, is broken off and floated away.

The icebergs of the north Atlantic come mainly from half a dozen glaciers on the west coast of Greenland. From May to July the larger ones drift about the Grand Banks, — a danger to transatlantic steamers.

THE ATMOSPHERE

The atmosphere, or air, is that portion of the earth which envelops the solid part. It consists of a mixture of gases, — mainly nitrogen, oxygen, carbon-dioxide, and the vapor of water. The two last form not more than three or four parts in one thousand.

At the sea-level the air rests upon the earth with an average pressure of 14.7 pounds on every square inch. Air is highly elastic. Moreover, it increases in bulk when heated. Warm air is, therefore, lighter than an equal bulk of cold air.

The amount of water-vapor varies greatly, increasing when the temperature increases, and decreasing when the temperature falls.

CONSTANT WINDS. — Wind is air in motion. It is caused by the unequal heating of the air in different localities. When at any place the air is heated, it increases in bulk, and therefore becomes lighter. It is consequently pushed upward by the cold air which flows in to take its place.

All general motions of the atmosphere are due to its heating and expansion in equatorial regions. This causes in upper regions a movement of air from the equator towards the poles, and at the surface, a counter motion from higher latitudes towards the equator.

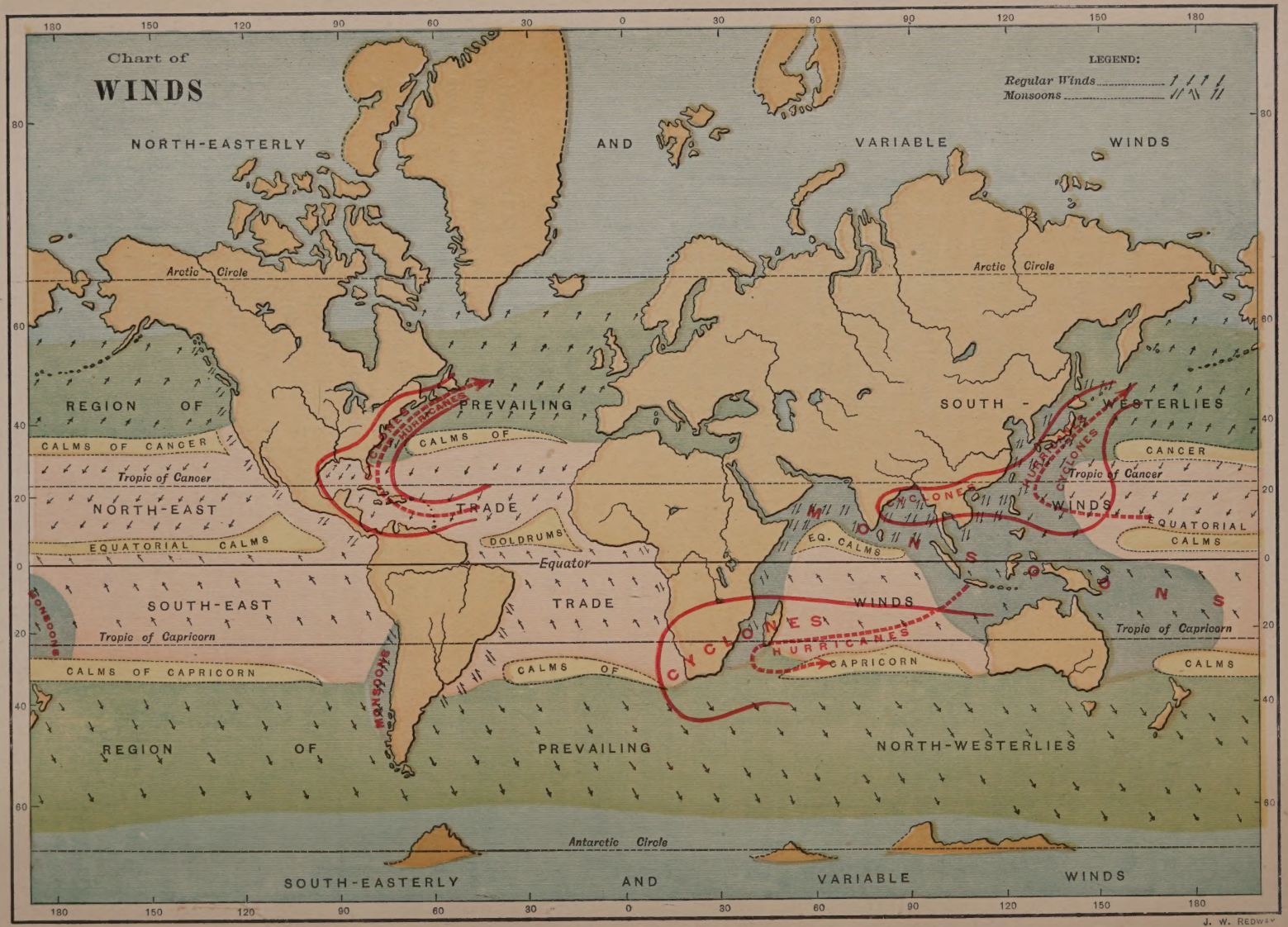


Chart of
WINDS
LEGEND:
Regular Winds
Monsoons
NORTH-EASTERLY AND VARIABLE WINDS
Arctic Circle
Arctic Circle
REGION OF PREVAILING SOUTH-WESTERLIES
CALMS OF CANCER
Tropic of Cancer
NORTH-EAST TRADE WINDS
EQUATORIAL CALMS
DOLDRUMS
Equator
CALMS OF
CANCER
Tropic of Cancer
EQUATORIAL CALMS
EQ. CALMS
MONSOONS
CYCLONES
HURRICANES
TYPHOONS
SOUTH-EAST TRADE WINDS
Tropic of Capricorn
CALMS OF CAPRICORN
CAPRICORN
Tropic of Capricorn
CALMS
REGION OF PREVAILING NORTH-WESTERLIES
Antarctic Circle
SOUTH-EASTERLY AND VARIABLE WINDS
180 150 120 90 60 30 0 30 60 90 120 150 180
80 60 40 20 0 20 40 60

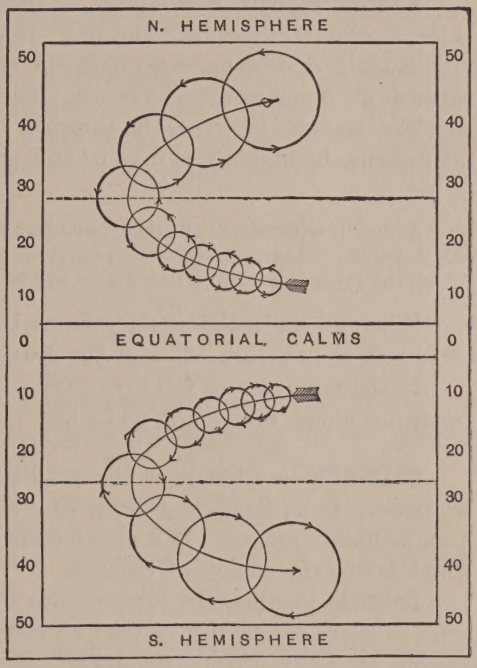
J. W. Redway

In equatorial regions the rotation of the earth deflects these currents to the west, and in temperate latitudes to the east.

The trade-winds prevail in equatorial latitudes. They blow from the northeast and from the southeast, and are separated by the region of *equatorial calms*. The trade-wind belt, with the intervening calm belt, oscillates north and south with the apparent motion of the sun.

The prevailing westerlies, or **anti-trade winds,** are found in temperate latitudes. They blow from the southwest in the North Temperate, and from the northwest in the South Temperate Zone. These winds are not so regular as the trade-winds. They are separated from the latter by the *calms of Cancer* and the *calms of Capricorn*. Their limits also shift with the position of the sun.

Monsoons are winds which blow half the year in one direction, and the other half in an opposite direction. They usually prevail on the western and southern coasts of continents.



Cyclone Paths

INCONSTANT WINDS. — On the land the winds are inconstant and irregular; and it is along the immediate coast regions only, that the trade-winds, prevailing westerlies, and monsoons are noticed.

The land-and-sea breeze is occasionally observed near the shores of large bodies of water. This wind is a sea-breeze by day and a land-breeze at night. During the day the earth becomes heated to a higher temperature than the water. The air being warmed, rises, and the consequent up-draft over the land is accompanied by a stiff breeze from the sea. After sunset these conditions are reversed. The land parts with its heat so readily that the air resting upon it becomes colder and therefore heavier than that over the water, and a land-breeze results.

A cyclone is a rotatory storm. Cyclones are caused by the overheating of the air next the surface of the earth. This, after a while, causes an up-draft, towards which the wind blows from all directions. The up-draft is the centre of the cyclone, or "storm-centre," towards which the wind blows in a spiral, or whirl. In the northern hemisphere the whirl is in a direction opposite to that of the hands of a watch. In the southern hemisphere it blows with the watch's hands. The path of the cyclone is shown in the accompanying diagram. Cyclones of the sea follow pretty nearly the tracks of warm ocean currents.

The path of the cyclone is usually two or three thousand miles in length; its breadth several hundred miles. The *hurricanes* of the West Indies and the *typhoons* of the China Sea are cyclones.

A tornado is a rotatory storm which is prevalent mainly in great plains. The path of the tornado rarely exceeds forty or fifty miles in length, and the destructive part of the whirl may be only a few rods in diameter.

A waterspout is formed when a tornado passes over a body of water. Waterspouts are most prevalent on the ocean.

ATMOSPHERIC MOISTURE. — Water exists in three forms. Below 32° F. it is ice, a solid; between 32° and 212° it is a liquid, its more common form; above 212° it boils, and becomes a vapor. A small portion is always present in the air as vapor at all temperatures, however. This vapor is a *part of the atmosphere.*

The amount of vapor is variable, and depends on the temperature. If the temperature be high, there may be as many as 22 grains of water in every cubic foot of air.

At 100° it will contain about 20 grains; at 90°, about 15 grains; at 80°, about 11 grains; at 50° only 4 grains; and at 32°, the freezing-point of water, scarcely 2 grains. If air at 80° be cooled to 50°, all the vapor in excess of four grains will be *condensed.*

When all the moisture is present that can be held in the form of vapor, the air is said to be *saturated,* or at the *dew-point.*

If the temperature fall ever so little, the excess will appear in the form of dew, frost, fog, cloud, rain, snow, or hail.

CLIMATE. — Climate is the condition of a region with reference to heat and moisture. It is modified mainly by latitude, altitude, winds, and the position of high mountain-ranges. It is also modified by the inclination of the earth's axis, to which is due the change of seasons.

Latitude modifies the temperature of a region. In the Torrid Zone, where the sun's rays are practically vertical all the year, the climate is warm. Here the only seasons are the rainy and the dry.

In the Temperate zones, where the rays of the sun are more or less oblique, the average temperature is considerably lower. Here there are alternate periods of warm and cold weather, called summer and winter. On western and southern coasts lying in the Temperate zones the seasons are also divided into the rainy and the dry.

In the Frigid zones, the cold is intense, and the seasons consist of a day (summer), and a night (winter), each six months in duration.

Altitude modifies temperature mainly, but it also modifies the amount of rainfall.

The temperature falls, on an average, one degree for every 300 feet of altitude. In the North Temperate Zone, there is perpetual snow above the altitude of 12,000 feet.

The limit of perpetual snow varies greatly. In the northern part of the North Temperate Zone it falls to less than 7,000 feet; in the southern part it is above 14,000 feet. It is higher on the Pacific than on the Atlantic slope.

The rainfall lessens also with altitude. Comparatively little rain or snow falls above an altitude of 12,000 feet.

Winds affect both temperature and moisture. If the prevailing winds are ocean winds, the seasons are usually a rainy and a dry. In regions swept by ocean winds the temperature is usually equable, there being comparatively little difference between summer and winter. The climate of the Pacific coast of the United States is an example.

On the contrary, if the prevailing winds are land-winds, the rainfall is usually distributed throughout the year. There is also considerable difference between the temperature of winter and that of summer.

High mountain-ranges materially affect the rainfall of a region, especially when they are situated near a coast that is swept by ocean winds.

Thus, the Chilian Andes wring nearly every drop of moisture from the rain-bearing winds. The western slope is deluged with rain, while the eastern receives none.

The Sierra Nevada and Cascade ranges condense the moisture of the west winds, giving the Pacific slope from 25 to 100 inches of rain, while the Great Basin receives hardly three inches.

Australia has no high mountain-range, and for want of it the greater part of the continent will always be a desert.

WEATHER PREDICTIONS. — The Weather Bureau of the United States, now under the control of the Department of Agriculture, was organized for the purpose of furnishing warnings with reference to

1. the approach of storms,
2. the probabilities of killing frosts,
3. the probabilities of winds dangerous to navigation,
4. the approach of floods in rivers, and
5. the advent of cold-waves.

The staff of the bureau consists of about eight hundred observers, regular and volunteer.

Twice a day the reports are sent to the main office at Washington from each weather station. The observations are made at the same actual time (not meridian time) at all the stations, and embrace temperature, height of barometer, direction of wind, percentage of cloudiness, humidity, and amount of rainfall.

The predictions for the succeeding twenty-four hours are based on the fact that a storm once formed travels in an eastwardly direction, at a rate that can be estimated with a fair degree of accuracy.

Most of the storms of the United States may be reduced to one of two tracks. Those that originate at the base of, or beyond the Rocky Mountains move eastwardly across the continent. Those that originate in the Caribbean Sea or the Gulf of Mexico sweep along the Atlantic coast.

The storm consists essentially of an area of low barometer, towards the centre of which the wind blows spirally from all directions. The area of low barometer

may, or may not, be accompanied by rain. Almost all the rain falls on the front edge of the area of low barometer.

A storm originating in the west is commonly preceded by an easterly, and clears with a westerly wind. The Atlantic coast storms are preceded by a northeasterly, and clear with a southwesterly wind.

A cold-wave occurs when the temperature falls 20° or more. Usually the cold-wave is not announced unless the temperature falls below 45°.

For day signals four flags are used. A square white flag denotes clear or fair weather; a square blue flag, rain. Temperature is indicated by a triangular blue flag. This signal placed above the square flag indicates higher temperature; placed below the square flag, lower temperature; omitted, stationary temperature. A cold-wave is indicated by a white flag with a black square in the centre.

QUESTIONS

What is said of the changes that have taken place on the face of the earth? What are the active agents that effect these changes? What would be the result were the Atlantic coast raised one hundred feet? — if the Mississippi valley were depressed one thousand feet? How do the laws that underlie physical geography affect human industries? What are the three divisions of physical geography? What part of the earth's surface is land? What part is water?

What does the Eastern continent comprise? — the Western? — the Australian? How are islands classified? What is a continental island? — an oceanic island? How do they differ in structure? What is said of the wave-formed islands, such as border the south Atlantic and Gulf coasts? — of coral islands? What is an archipelago?

How is the surface of the land diversified? What is a plateau? — a table-land, or mesa? — a plain? What are the various names by which plains are designated? What is an alluvial plain? — a coast plain? What is said of the commercial importance of passes? What is said of the situation of volcanoes with respect to the sea? What commercial products are obtained from volcanic regions? From what base-level are elevations of land measured? Name the highest peak of North America. Name several important depressions below sea-level. What depressions of this character in the United States? What is a desert? To what causes are desert regions due?

What are the largest divisions of the Sea called? Name them in the order of their size.

What three motions have ocean waters? What are tides? By what are they caused? What is meant by flood tide? — ebb tide? — neap tide? — spring tide? What is the interval of time between successive high tides? — [*Ans.* — About twelve hours and fifty minutes.] Name the principal causes of ocean currents. Describe the Equatorial current, — the Gulf stream, — the Kuro Siwo, or Japan current, — the principal Arctic current. What are Sargasso seas? What commercial product is obtained from floating seaweed, and how?

Explain how continental waters are derived from the ocean. What becomes of the water that falls on the land? Define a lake, — a lake basin. Under what circumstances may lakes become salt? What is a river? By what names are small streams called? What is a river basin? — a river-system? What is a glacier? How does a glacier resemble a river? What is said of the origin of icebergs? Whence do many of the icebergs of the north Atlantic originate?

What is the atmosphere? Of what gases is it composed? What is normally its weight on a square inch of surface? How does heat affect the atmosphere? What is said of the amount of water-vapor in the atmosphere? How is the direction of the principal air-currents modified? Describe the trade-winds. Where are they prevalent? What is their direction? Where are the belts of prevailing westerlies? What is their direction? What is said of the oscillation of the various belts or zones of winds? What and where are the various calm-belts? What are monsoons? In many instances, how are they

explained? In respect to constancy, how do land winds compare with ocean winds? What are land-and-sea breezes? What is a cyclone? How do cyclones originate? What is the direction of the path in each hemisphere? What is the direction of the whirl? What is said of the correspondence of cyclone tracks and warm ocean currents? What is a tornado? — a waterspout?

What are the three forms in which water may exist? What causes the change from one form to another? When is air said to be saturated, or at the dew-point? What results when air is cooled below the dew-point?

What is climate? By what is it modified? How is climate modified by latitude? — by altitude? — by winds? — by high mountain-ranges? How do the Chilian Andes affect the rain-fall of South America? What is the effect of the Sierra Nevada and Cascade ranges on the rain-fall of the Great Basin?

For what was the Weather Bureau organized? By what department of government is it controlled? What is meant by a storm? What is the law of storms? What are the principal storm-tracks of the United States? What is a cold-wave? Describe the various day signals, and explain how they are used.

GEOGRAPHICAL AND POLITICAL DIVISIONS

The relative position of the continents naturally suggests the division of the earth into eastern and western hemispheres.

The Eastern Hemisphere comprises the three grand divisions of the Eastern continent, the Australian continent, and a part of the grand division called Oceania.

The Western Hemisphere contains the grand divisions of the Western continent, and the remaining portion of Oceania.

A small part of the Eastern continent extends into the Western Hemisphere, and a small part of Greenland lies in the Eastern Hemisphere.

Each continent is subdivided into nations or states, and colonies.

Europe comprises the kingdoms of Great Britain and Ireland, The Netherlands, Belgium, Denmark, Norway and Sweden, Spain, Portugal, Italy, Greece, Roumania, Bulgaria, and Servia; the empires of Russia, Germany, Austria-Hungary, and Turkey; and the republics of France and Switzerland.

Asia comprises the empires of China, Japan, and British India, and the sovereignties of Persia, Assam, Siam, Afghanistan, Beluchistan, Corea, Nepaul, Bhotan, and a large number of other small independent states. British India is a part of the British Empire; Siberia is part of the Russian Empire; Asia Minor and most of Arabia are Turkish possessions.

Much of the Malay peninsula, the greater part of Borneo, all of Sumatra, Celebes, Java, and many smaller islands belong to The Netherlands. The Philippine islands belong to Spain.

Africa consists mainly of colonial possessions of European powers. The Congo Free State, Orange Free State, South African Republic, Abyssinia, Liberia, Morocco, and a large number of native kingdoms, are independent.

Cape Colony, Natal, Zululand, Griqua Land, and certain unsurveyed parts, belong to Great Britain. Tripoli and Egypt are nominally Turkish possessions; Tunis and Algiers are French colonies. Madagascar is a French protectorate. Portugal and Germany also control large areas.

Australia, Tasmania, New Zealand, and the Feejee islands are British possessions. These have recently formed a union called the Australasian Federation.

New Zealand and one or two other colonies had not, in 1891, formally joined the Federation.

North America comprises the United States, Mexico, the five independent states of Central America, the Dominion of Canada and Newfoundland, and other possessions of Great Britain. It includes also the Danish possessions, Greenland and Iceland; and the West Indies, a collection of islands mostly dependent upon nations of Europe.

The island of Hayti is composed of the two republics of Hayti and San Domingo. Balize, one of the divisions of Central America, is a British possession.

South America is composed of the United States of Colombia, Venezuela, Peru, Bolivia, the United States of Brazil, Paraguay, Uruguay, the Argentine Republic, Chili, — all independent republics; and Guiana, which is divided into English French, and Dutch colonies.

Besides the larger and more important divisions, there are many smaller ones, mostly islands in the Atlantic and Pacific oceans. Some of these are independent, but the majority are under the protection of some one or other of the nations of Europe.

QUESTIONS

What are the two grand divisions of land upon the earth's surface? How is the Eastern Hemisphere subdivided? — the Western Hemisphere? How is each continent subdivided?

What are the countries of Europe? — of Asia? — of Africa? — of the Australasian Federation? — of North America? — of South America? Which are monarchies? Which are republics?

Which of the continents is largest? — smallest? Which hemisphere contains the greater portion of the earth's land surface? [*Ans.* — The Northern Hemisphere.]

CHAPTER I.

COMMERCE AND COMMERCIAL HIGHWAYS

Commerce is traffic or trade — the interchange of commodities between different countries, or between places and persons of the same country. Trade may be conducted on either a large or a small scale, but the term commerce is appropriately given to traffic upon a large scale.[1]

The rudest and earliest form of commerce consists of simple barter, — the exchange of the surplus products of one family or one hamlet for those of another.[2] With increase of population and intercourse a tendency arises for each man to devote himself to the production of one thing, or of a few things. Let us say that it is corn which he can raise to advantage, rather than to attempt to produce everything that he needs. His neighbor may be better situated to raise cattle. These two men exchange products, each supplying something that the other cannot produce to advantage. There may be a third neighbor who owns no land, and who accordingly raises neither corn nor cattle.

Division of Labor. — But if he is a mechanic, he may weave cloth, and exchange this product with his neighbors. Thus, while one man produces vegetable food, and another animal food, both of which are necessary to maintain existence, the third produces the covering necessary to protect the body from the elements.[3]

As it is in this primitive state of affairs, so it is in the world. The soil of one region is best adapted for tilling; another may have land adapted to grazing, but unsuited for tilling; a third may be too densely populated to depend upon agriculture, but by manufacturing articles required by these other two peoples, it can exchange products with them.

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[1] A man that deals largely in articles sold in importing or exporting is called a merchant, and one that does business on a small scale, or keeps a shop, is called a tradesman.

[2] All commerce, in its last analysis, consists in nothing more than the barter of commodities. What is called the "balance of trade" is merely, in any given case, the measure of the difference between the exports and imports of goods, which excess or deficiency is always made up by the export or import of bullion; and the latter in such case is always shipped, not as money, but as merchandise, the market value of which varies from time to time like that of any other commodity.

[3] It was this necessity for the specialization of work that early gave rise to the various simpler trades; and in these, by years of apprenticeship, the artisan has been prepared for his life-work. The division of labor encourages skill in each line of occupation, and is the only means by which great excellence can be reached in any handicraft, art, or science. This specialization of work lies at the basis of the world's progress, and under its influence the whole fabric of modern industry has developed.

Money. — As civilization has extended, and as society has grown more complex, it has become necessary to have some measure of value common to all nations, so that there may be an easy exchange of commodities. Out of this necessity has arisen a universally accepted medium for the exchange of values called money. In nations where commerce is highly developed, written orders to pay, known as bank drafts, are sufficient, and these orders are worth their face value as money in any nation; but among more primitive peoples, many articles that are used for food, clothing, or ornament, serve as money.[1] It is the desire of every man to accumulate money, so that in case he has no other article to exchange for food or clothing he can use this. Among nations, too, it is the desire of each to be as far as possible independent of others; hence, a tariff is often imposed upon imported articles in order to promote home manufactures, or to raise money for government use.

Consuls. — To encourage international trade, each nation has representatives, called consuls, at every city of industrial or commercial importance throughout the world. These representatives devote their time to furthering the best interests of their country. They endeavor to increase trade, and to prevent frauds or deceptions in the sale or the purchase of goods. They also make frequent reports to their home governments upon the progress or decline of commerce in the territory to which they are accredited. For the guidance of these consuls, the various countries have made treaties of commerce with one another.[2]

To carry on the interchange of products, there must be means of transportation, and highways as well, over which the products can be carried.

Transportation. — In a primitive state, man himself carried the products of his own industry; but as he advanced in civilization, and the products of his labor increased, he trained beasts to bear his burdens for him; or if a waterway were more convenient, he built a boat.[3] When traffic constantly passed back and forth between two points a path was worn. In the course of time the paths, made more easy for travel by removing obstructions, became roads.

In the civilized nations of Europe and America, and to a certain extent in a few other countries, the highways travelled by beasts of burden have been made wide

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[1] In China, opium is as good as money. In other parts of Asia, bricks of tea pass current. In the early history of America, tobacco was used. Furs are now used as money by the Eskimo, as are cattle in many parts of Africa.

[2] By the usage of nations, French is the language in which international deliberations have been carried on; but English is the language of commerce, and for the purposes of commerce it is more extensively used than any other.

[3] In northern Africa and western Asia, where the country is generally hot and sterile, camels are the carriers of merchandise. In caravans of one hundred or more they travel several days without either food or water, each animal carrying from 300 to 800 pounds about twenty-five miles daily. In mountainous regions, donkeys and mules, and sometimes horses, are used. Mules are very sure-footed pack-animals. A horse or a mule can carry about 200 pounds; a donkey, more than half as much. In India, the ox is a common beast of burden, and in the Himalaya mountains the mountain sheep or yak is used. In South America the llama carries ore to the coast from the mines high up in the Andes, and returns to the mines laden with supplies.

and free from obstructions, so as to permit the use of wheeled vehicles, for an animal can draw much more than it can carry on its back.[1]

The greatest advance thus far made in the means of land transportation is found in the steam locomotive.[2] The locomotive and its train of cars is a greater advance over the horse and wagon than the horse and wagon are over the pack-train. Wheat is profitably shipped by rail and steamer from the Mississippi valley to London and other parts of Europe. In the same valley, however, it can scarcely be grown with profit at a distance of more than twenty or thirty miles from a railway. This fact alone shows the great advantage of railways, and the extent of the commercial revolution their introduction has brought about. A freight locomotive costs about $8,000, weighs nearly fifty tons, and will draw 2,400 tons at a rate of thirty miles or more an hour. A railway with its equipments costs from $20,000 to $60,000 per mile. Some passenger-trains run at an average speed of fifty-five miles an hour. The first steam railway for general purposes was that between Stockton and Darlington (England), opened in 1825. In the year 1831, the first passenger-train on the American continent ran from Albany to Schenectady in the state of New York; and in 1835 was opened the railway from Brussels to Malines, the first on the mainland of Europe.

About three-fourths of the surface of the globe is water; and, as many of the great producing centres of raw material are separated from the great manufacturing centres by oceans, most of the international traffic is dependent upon ocean-going vessels. Hence ocean traffic has demanded the same improved means of transportation that traffic on land has required. Steam has, therefore, largely taken the place of the uncertain sail; and now every maritime nation has a fleet of steamships, each with an actual capacity of from 5,000 to 10,000 tons,[3] and a speed of from fifteen to twenty miles an hour.[4] A steamer is estimated to have three times the carrying

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[1] On a good, level road, a horse can draw, at the rate of two to four miles an hour, twenty to thirty times as much as it can carry on its back, and often a yoke of oxen will draw over a rough road a load that a span of horses could scarcely move. In a few countries, where draught animals are costly but human labor cheap, vehicles, both for merchandise and passengers, are drawn by men.

[2] A locomotive for freight-trains differs in many respects from one used in drawing passenger-trains. For the latter, speed is required; for the former, traction. The freight locomotive, therefore, is built with from six to twelve driving-wheels, thus increasing the friction upon the track.

[3] The carrying capacity of vessels, that is, the amount of space available for stowing away the cargo, is reckoned in tons. The adopted measurement is one hundred cubic feet of space to a ton. This measurement does not include the deck space, where part of the cargo is sometimes carried. The registered tonnage is always less than the actual tonnage.

In 1888 the total tonnage of the United States merchant marine was over four millions, of which about one million was in foreign, and three millions were in coastwise trade. Of sailing-vessels, the tonnage was about two and one quarter millions, and of steam vessels not quite two millions.

[4] The ship-building of the United States in 1798 was estimated at 18,000 tons; in 1894, at 182,000 tons. The increase in the size of the vessels has been very great. In 1789 a vessel of 300 tons was a large one. To-day some of the great ocean steamships have a capacity of 10,000 tons. Steamers of 5,000 tons capacity are quite numerous. Coasting-vessels of 50 tons were considered large a century ago. Now there are many which have a capacity of from 800 to 1,000 tons.

power of a sailing-vessel of equal tonnage, because it can make an average of three voyages to every one made by the sailing vessel. The principal countries of the world, arranged in the order of the total tonnage of both sailing and steam vessels, are: Great Britain, the United States, Norway and Sweden, Germany, France, and Italy. Arranged in the order of the value of commerce they are: Great Britain, the United States, France, Germany, Belgium, The Netherlands, Russia, and Austria-Hungary. With the exception of the United States, all of these countries are European.

Ocean traffic, particularly in the case of sailing-vessels, is dependent to a great extent on the trade-winds and the great ocean currents. The trade-winds blow in a belt, varying from 20° to 25° in width, both north and south of the equator in the Atlantic and Pacific oceans. In the Indian Ocean there are only the southerly trade-winds. Trade-winds blow uninterruptedly, but their location varies, being dependent on the season of the year. As they are caused by the heat of the equatorial regions, they move with the sun either away from or towards the equator. (See p. 25.) Thus, in summer, north of the equator, the trade-winds would be found farther away from the equator than they would be in winter.

In addition to the great trades, the winds that are known among sailors as the "roaring forties," are of value to navigation. These winds are regular, and to make the voyage to Australia, vessels go by way of the Cape of Good Hope, and return by way of Cape Horn, having a fair wind all the voyage. The corresponding winds in the northern hemisphere are very variable.

In the traffic between Europe and America advantage is taken of the Gulf Stream. This stream flows from Florida Strait along the coast of North America as far as the New England states, then sweeps off across the Atlantic and divides, part of it trending north of Great Britain and the rest south along the coast of Spain. This is the most important current of the Atlantic Ocean. In the north Pacific Ocean there is a similar stream called the Japan Current, or Kuro Siwo. It sweeps from the region of Japan northerly and easterly along the Aleutian Islands, and its drift reaches the west coast of North America. Sailing-vessels always depend upon these currents to make quick passages. The great bulk of ocean trade is carried on between a few important ports, and the routes over which it passes are very well defined by the ocean-currents and the trade-winds.

To aid in carrying on ocean traffic each nation issues charts of all waters. On these charts all dangers to navigation are marked, and every sailing-master lays his course accordingly. On the coast of nearly every country lighthouses are erected at dangerous points, while harbor channels are marked by beacons and buoys. The United States maintain 2,729 beacon lights and light vessels, and over 5,000 buoys, fog horns, and bells. There are also 244 life-saving stations. Since these stations were established in 1871, they have saved $85,000,000 worth of property, and rescued about 40,000 people from drowning.

Ocean Routes. — From New York and the neighboring ports of Boston, Philadelphia, and Baltimore, the main routes are: East (and for sailing-vessels with the Gulf Stream), to the ports of Europe; south, outside of the Gulf Stream to the West Indies and Central America; southeast, to and around the Cape of Good Hope to the East Indies; and, with a southwesterly sweep, to the eastern ports of South America, and around Cape Horn [1] to the ports of the western coast of America.

From San Francisco the routes are: Southeast, down the coast to the Isthmus of Panama; south, with a southeasterly sweep around Cape Horn; southwest, to the Hawaiian Islands and to Australia; and west, to the Asiatic ports. From the commercial ports of Europe the routes are west to North America, and southwest to Central America, South America, and Cape Horn. Traffic between these ports and Asia is mostly by way of the Suez canal instead of the Cape of Good Hope.

Before the recent introduction of steamships of high speed, coaling and supply stations were established in various parts of the world. Such stations are very little used now, except as the various governments of the world retain them for naval supply stations in case of war. In the Atlantic Ocean the island of St. Helena was the most important of these stations until the routes of commerce were changed by building the Suez canal. In the Pacific Ocean the Hawaiian islands filled a similar position, and still retain some of their importance; but the Nicaragua canal, when completed, will have the same effect upon them that the Suez canal has had on the station of St. Helena. In the centre of the Pacific Ocean is Midway Island, formerly an important coaling-station, but now abandoned.

Commerce, the parent of civilization, had its beginnings in the East. In its primitive forms it could scarcely have had better methods at command than those afforded by caravan and by river routes. Yet the Mediterranean Sea, whose borders are so largely peninsular in their conformation, must early have tempted to maritime venture the hardy races settled upon its shores.[2] And we know that the

[1] In the Strait of Magellan is a "post-office" known to all seamen. Each passing skipper places in the box newspapers and letters for other passing vessels, and takes from it mail and papers for himself.

[2] Prior to the discoveries of the ocean route to India, and of the continent of America, the principal commerce of the world was confined to the regions lying around about the landlocked Mediterranean. The countries bordering upon its waters were the seat of the civilization of that time, and commerce between these countries, as well as with the peoples of western Asia, was very active. In the middle ages, and as long as this commerce was carried on through western Asia, or by the Red Sea, Italy had remarkable advantages for securing the chief share of it. Venice and Genoa were by far the most important ports through which the traffic was carried on. Their ships visited all the coasts of the Mediterranean and Black seas and of western Europe. Commerce with the inland parts of Europe was by way of the Alpine passes. The discovery, near the close of the fifteenth century, of the sea-way to India round the Cape of Good Hope, by Vasco da Gama, dealt a heavy blow to the eastern trade of the Italian cities, and these have ever since been of less importance to commerce. It is, however, to be noted that Venice and Genoa are now, as they were in earlier times, relatively the most important commercial ports of Italy. Other Italian cities then centres of active trade, were Pisa, Ancona, and Florence. Some idea of the commercial importance of these cities may be gained from the fact that in the fourteenth century Venice had a fleet of 3,000 merchantmen, manned by 25,000 sailors.

Constantinople in the east, and Barcelona and Marseilles in the west, were Mediterranean cities of great commercial activity in the middle ages.

Phœnician, the Greek, the Carthaginian, and the Roman were, in turn, masters of its extensive commerce. The great river-systems of the world have played, and must continue to play, a great part in the drama of civilization. The Euphrates, the Tigris, and the Nile have been the seats of empires, and were to ancient peoples what the Mississippi and Great Lake systems are to the people of our own country.

Inland Waterways. — Transportation by water has the advantage of being cheaper than transportation by land. Hence most of the natural waterways of the world have been improved, and in many countries canals have been constructed to supplement the river-systems. No single commercial highway was ever built that has been more beneficial to trade than the Suez canal. It reduced the sailing distance from England to India from 12,000 to 7,000 miles, and opened the way for an immense steamship traffic between Europe and Asia. This canal, connecting the Mediterranean with the Red Sea, was opened to traffic in November, 1869. It is 100 miles long, and, with its approaches, cost about $100,000,000. It is 325 feet wide at the top, 75 feet wide at the bottom, and 26 feet deep. Early in 1887 it was opened to night navigation throughout its whole extent for vessels provided with proper electric lighting apparatus. In 1893 more than 3,300 vessels traversed this canal, nearly all of them by night.[1] The success of this canal has been so great that strong efforts have been made to build one across the Isthmus of Panama. Count Ferdinand de Lesseps, who built the Suez canal, also projected one to connect Colon and Panama. Only a small part of the work had been accomplished, and nearly $400,000,000 spent, when, in the spring of 1889, the project was abandoned.

England and France have extensive and valuable canal systems. In May, 1894, the Manchester ship canal connecting Liverpool with Manchester was opened for traffic. The canal is 35 miles long, 26 feet deep, and 125 feet wide at the bottom. The Netherlands is intersected by a network of these artificial waterways. A ship canal across the Isthmus of Corinth in Greece was opened to traffic in 1893. It cost $5,000,000. A glance at the Reference Chart will make plain the commercial time that this improvement must effect.

In 1888 American capitalists projected a canal to connect the Atlantic and Pacific oceans across the Central American state of Nicaragua. The canal surveyed has a total length of 169 miles; 141 miles are natural waterways, leaving 28 miles of actual canal to be excavated. The depth of the canal will be 30 feet; in the narrowest place it will have a width of 80 feet; the greatest width will be 120 feet at the bottom and 360 feet at the top. Aid from the government has been asked, and may be necessary for its completion. Greytown is the terminus on the east, and Brito on the west. This route will benefit sailing-vessels more than

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[1] Early in the 16th century the Venetians proposed a canal across this isthmus in the hope of thereby retaining their waning commerce with the East. The present canal restores and partly follows the route of an earlier canal, the date of whose construction cannot now be determined, but which joined the Nile with the head of the Red Sea.

The Nile valley was anciently fertilized for considerable distances by a system of canals for irrigation by the waters of that river.

would a route farther south, because it is in the region of the trade-winds, and can be approached at all seasons, while the Isthmus of Panama is in a region where calms are prevalent on the Pacific coast.

Lake Nicaragua is elevated 106 feet above mean tide. The lake affords 56 miles of navigation, and is to be connected with the Pacific by a canal 16 miles long, beginning at the Rio del Medio and terminating at Brito. The first seven and a half miles require an excavation averaging 54 feet in depth and is the most expensive part of the whole work. Ten locks and one tide lock are required between the lake and the sea. It is estimated that the lake will supply thirty-eight times as much water as will be needed for the use of the lockage.

This canal will connect our Atlantic and Gulf coast lines with the Pacific coast, and save a voyage of nearly 14,000 miles around Cape Horn.

It must greatly increase the commerce between the Atlantic and Pacific coasts.

The Gulf states will reap as much benefit as those on the Pacific coast. The coal fields of Alabama can be drawn upon to furnish San Francisco and other cities with cheaper fuel than can be had elsewhere.

It is probable too that Japan can bring cotton from the Gulf states as cheaply as she now gets her supply from India. By the present sailing route, New York and Liverpool are about equally distant from San Francisco. The canal will bring New York 2,700 miles nearer than Liverpool to all the American Pacific ports, and with this important advantage our Eastern merchants should be able to control most of the Pacific coast commerce.

The route from New York to Yokohama is shortened some 6,000 miles by this passage across Nicaragua. The distance from New York to Yokohama *via* the Nicaragua route is 2,000 miles less than that from Liverpool to Yokohama, by the Suez Canal. This shortened route should give New York a great advantage in tra[illegible].

[illegible] canal systems of the United States have an aggregate length of about [illegible] miles. The most important of the canals are the Erie, St. Mary's Falls, Champlain, Raritan, Delaware and Hudson, Delaware and Chesapeake, Miami, Wabash, and Ohio. On the north, the waterway which consists of the St. Lawrence River and the Great Lakes, and which connects the grain-growing regions of the northwest with the Atlantic coast, requires at several points to be supplemented with canals. One of these, between lakes Superior and Huron, avoids the rapids of St. Mary's River; the Welland canal connects lakes Erie and Ontario, and is made necessary by the rapids and falls of the Niagara River. There are several small canals in the St. Lawrence route, near Montreal, also occasioned by the necessity of avoiding the rapids of the river. It is proposed to construct a canal across Cape Cod, in Massachusetts, by which there will be not only a saving of time in transport, but an avoidance of the dangers of navigation around the cape.

Steamboats now ply on nearly all the great rivers and lakes of the world. Water transportation is slow compared to that of railways, yet owing to its

CANALS
IN THE
UNITED STATES and CANADA
Canals in Operation
Canals Abandoned
LAKE SUPERIOR
LAKE MICHIGAN
LAKE HURON
LAKE ERIE
LAKE ONTARIO
ATLANTIC OCEAN
MINNESOTA
WISCONSIN
MICHIGAN
ILLINOIS
INDIANA
OHIO
KENTUCKY
TENNESSEE
MISSOURI
ARKANSAS
PENNSYLVANIA
NEW YORK
WEST VIRGINIA
VIRGINIA
MARYLAND
DELAWARE
NEW JERSEY
ONTARIO
QUEBEC
MASSACHUSETTS
VERMONT
NEW HAMPSHIRE
CONNECTICUT
RHODE ISLAND
SHIP CANAL
MINERAL RANGE
COPPER REGION
SAULT STE MARIE CANAL
ILL. & MICH. CANAL
ERIE CANAL
WELLAND CANAL
CHAMPLAIN CANAL
OHIO CANAL
MIAMI & ERIE CANAL
WABASH & ERIE CANAL
CHESAPEAKE & OHIO CANAL
DELAWARE & RARITAN CANAL
SCHUYLKILL CANAL
LEHIGH CANAL
DELAWARE & HUDSON CANAL
CHESAPEAKE & DELAWARE CANAL
Keweenaw Pt.
Keweenaw B.
Marquette
Ishpeming
Escanaba
Mackinac Str.
Cheboygan
Green Bay
Traverse City
Ludington
Saginaw Bay
Bay City
Saginaw
Muskegon
Grand Rapids
Kalamazoo
Port Huron
Port Sarnia
Detroit
L. St. Clair
Pt. Pelee
Monroe
Toledo
Sandusky
Cleveland
Youngstown
Akron
Canton
Steubenville
Wheeling
Parkersburg
Charleston
Portsmouth
Cincinnati
Newport
Covington
Dayton
Springfield
Columbus
Zanesville
Athens
Chillicothe
Hamilton
Richmond
Cambridge City
Indianapolis
Terre Haute
Jeffersonville
New Albany
Evansville
Louisville
Frankfort
Lexington
Cairo
Paducah
Fort Wayne
Defiance
Logansport
La Fayette
South Bend
Chicago
Joliet
La Salle
Peru
Rock Island
Davenport
Dubuque
Milwaukee
Racine
Kenosha
Madison
Green Bay
Oshkosh
Fond du Lac
La Crosse
Eau Claire
Minneapolis
St. Paul
Duluth
Superior
Ashland
Houghton
Sault de Ste. Marie
St. Mary's Village
Mackinac
Bois Blanc I.
Manitoulin I.
Georgian Bay
North Passage
Grand Passage
Ottawa R.
Montreal
Lachine
Cornwall
Ottawa
Smith's Falls
Prescott
Ogdensburg
Kingston
Toronto
Hamilton
St. Thomas
Niagara Falls
Rochester
Buffalo
Dunkirk
Erie
Oswego
Rome
Little Falls
Utica
Schenectady
Troy
Albany
Watertown
Whitehall
Fort Edward
Burlington
Montpelier
Concord
Manchester
Boston
Worcester
Springfield
Hartford
Providence
New London
New Haven
Long Island Sd.
Long Island
New York
Brooklyn
Jersey City
Newark
Trenton
Bordentown
Camden
Wilmington
Philadelphia
Reading
Bristol
Allentown
Easton
Coalport
Lock Haven
Williamsport
Montoursville
Wilkesbarre
Scranton
Honesdale
Port Jervis
Binghamton
Ithaca
Watkins
Olean
Corning
Elmira
Pottsville
Harrisburg
Lancaster
Columbia
Middletown
Newport
Huntingdon
Hollidaysburg
Altoona
Johnstown
Pittsburg
Allegheny City
Beaver
New Castle
Meadville
Franklin
Oil City
Warren
Jamestown
Salamanca
Dover
Baltimore
Annapolis
Washington
Alexandria
Georgetown
Fredericksburg
Richmond
Petersburg
Lynchburg
Staunton
Norfolk
Portsmouth
Danville
Roanoke
Drummond L.
Dismal Swamp
Weldon
Wilmington
Cape Fear R.
Pamlico Sd.
Albemarle Sd.
Roanoke I.
C. May
C. Henlopen
C. Charles
C. Henry
Delaware Bay
Delaware Cy.
Chesapeake Bay
Susquehanna R.
Potomac R.
Monongahela R.
Ohio R.
Kanawha R.
Big Sandy R.
Kentucky R.
Cumberland R.
Tennessee R.
Mississippi R.
Missouri R.
Illinois R.
Rock R.
Wabash R.
White R.
Osage R.
Kaskaskia
Gasconade
Hannibal
Quincy
Keokuk
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Peoria
Bloomington
Decatur
Springfield
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Alton
St. Louis
Jefferson City
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Aurora
Elgin
Joliet
Freeport
Rockford
Evanston
Cedar Rapids
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Des Moines
Council Bluffs
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Oswego
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Troy
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Rockford
Evanston
Cedar Rapids
Davenport
Des Moines
Council Bluffs
Omaha
Sioux City
Dubuque
Winona
R. D. Servoss, Eng'r, N.Y.

comparative cheapness steam navigation is invaluable to the commercial supremacy of any country.[1]

Highways. — The Romans, in their time, carried the art of road-making to great perfection, but the roads they built were comparatively few in number, and connected only the more important centres. It was not until within about a hundred years that anything like the roadway with which we are familiar was undertaken. Up to the present century highways connecting even the important towns of Great Britain, a country presenting peculiar advantages for the construction of such works, were very bad. The carriage road from town to town, and village to village, as we now know it, — graded, macadamized, and crowned, — is an improvement of very recent times. The Roman roads were used for military rather than commercial purposes. Modern highways are built mainly for the transportation of merchandise. In general the nations of Europe are well supplied with good roads ; the old Roman military roads in Italy are exceptionally good. In India the government has constructed a road from Calcutta to the border of Afghanistan. In Peru and other South American countries, are fine highways built by the Incas long before the voyage of Columbus. Some of these roads are still in use.

The United States is behind other great nations in the quality of its roads. In 1800 only the larger cities were connected by roads, and these were very poor.[2]

Several centuries ago a very great trade was carried on by caravans whose routes, added one to another, extended from Canton to Gibraltar. Now most of this trade has sought other channels of transportation, and the only important caravans remaining are from Russia to China and Corea; from Damascus eastward into Persia and adjoining regions ; from Damascus to Mecca; from Morocco to Timbuctoo; from Algiers and Tripoli to Timbuctoo ; from Tripoli to the Soudan; and from Morocco to Mecca.

The Railway. — The highroad of civilized nations of the present day is the railway. Railways were introduced at a time when trade was greatly impeded for lack of means of transport, and have been built, not only in every commercial

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[1] The steam engine was in 1777 a useful power, but not until Fulton in 1807 built the *Clermont* was a successful steam-vessel produced. Fulton travelling in Scotland in 1803 took drawings of the *Charlotte Dundas*, a steamboat built by Mr. Symington to tow vessels on the Forth and Clyde canal. He brought one of Boulton and Watt's 20 horse power engines to America, and built the *Clermont*, which made the voyage of 110 miles in 24 hours from New York to Albany.

In 1811 Henry Bell of Glasgow started the *Comet* on the Clyde, and thus founded steam navigation in Great Britain. In 1815 a steamer went from Glasgow to London. In 1818 one made the trip from New York to New Orleans, and in 1819 the *Savannah* crossed the Atlantic. Not until nineteen or twenty years later were regular lines established. On April 4th, 1838, the steamer *Sirius* sailed from Cork, and on the 8th, the *Great Western* sailed from Bristol. Both ships arrived in New York on April 23d, so that ocean steam navigation really dates from 1838.

[2] In consequence of this, journeys by coach were very slow. That from Philadelphia to Baltimore consumed from three to five days. The transportation of merchandise from Philadelphia to the western part of Pennsylvania cost over $200 a ton, and was effected by pack-animals. At the eve of the introduction of railways the government built a military road from Baltimore, through Wheeling and Cincinnati, to St. Louis.

country, but in nearly every colony and petty nation in the world. In 1846 there were only 3,000 miles of railway in use in the world; in 1891 there were about 350,000 miles, nearly half of which are in the United States.[1] The cost of railways in the United States alone has been $9,000,000,000. The value of the railways of the world is estimated at over $28,000,000,000, or about one-tenth of the total wealth of civilized nations.[2]

Where traffic has demanded it, various railway companies have combined to operate continuous lines between distant commercial centres of importance, which are called trunk lines. The more important of these lines are: In the United States, the half dozen or more trans-continental lines which connect the Mississippi valley with the Pacific coast. In the East are the New York Central, the Erie, the Pennsylvania, the Baltimore and Ohio, and several others which connect the Atlantic seaboard with the Mississippi valley. Connecting with these lines are others of great importance — the Atchison, Topeka and Santa Fé, the Chicago, Burlington and Quincy, the Missouri-Pacific, the Rock Island, the Chicago and Northwestern, and others. These lines, with their branches and connections, make a net-work of railways that connects all the cities of importance throughout the country, affording an outlet for the products of every district.

In Canada is the Canadian Pacific railway, which, with its supplementary lines, connects Halifax and Quebec with Vancouver. This makes the journey between Great Britain and China five or six days less than by the sea route.

At the Isthmus of Panama is the Panama railway, 47 miles long, connecting Colon (or Aspinwall) on the east and Panama on the west. Colon is connected by steamship with the United States and Europe, while Panama is in steamship communication with the chief ports on the Pacific coast of both North and South America.

The Tehuantepec railway, now under construction in Mexico, will be a competitor of the Panama road, as it will bring the Pacific Ocean three or four days nearer to New York. The completion of the Mexican Southern road will make it possible to go from New York to Tehuantepec, without change of cars, in seven or eight days.

The near completion of the transcontinental railway between Buenos Ayres and Valparaiso will save the dangerous voyage around Cape Horn, and reduce the dis-

[1] The total mileage of railways in the United States (January, 1893) was 175,441. The largest mileage operated by a single system is that of the Atchison, Topeka, and Santa Fé — over 9,000 miles. The railways of the United States afford employment for about a million persons. The longest continuous line is the Canadian Pacific, extending from Quebec to Vancouver, B.C., a distance of more than 3,000 miles.

[2] It is estimated that all the money the world possesses would purchase only one-third of the railways, inasmuch as the latter are valued at over $25,000,000,000, — or about one-tenth of the total monetary wealth of civilized nations, and over one-quarter of their invested capital. The railway business is one that is increasing at an almost incredible rate. In 1875 the world's railways aggregated 185,000 miles, while in 1893 there were over 406,000 miles, thus showing an increase of 221,000 miles in eighteen years, or an average of 12,000 miles a year. When it is considered that this means the laying each year of enough track to reach half around the earth, the magnitude of the increase can be better appreciated.

tance from the east coast of the United States, and from Europe to the west coast of South America, ten or fifteen days.[1]

The greatest railway project now under way is the Siberian Pacific road, extending across Russia and Siberia, a distance of 4,000 miles. This road will not only open a vast area of arable land to settlement, but it will give a great impetus to the trade of interior and western China.[2] Another railway, the Trans-Caspian, built by the Russian government, extends from the shores of the Caspian Sea to the border of Afghanistan, and is a growing trade route from Europe to central Asia.[3]

The Postal System. — With the increase of commerce between nations, there has been a corresponding increase in the interchange of thought and courtesies. This has led to the establishment of post-offices in every country. For the more rapid and safe communication between nations, an international postal union has been organized, so that letters and small packages can easily be sent from one country to another. Nearly every country is a member of this union, and it is of great benefit to commerce. It provides a cheap means of communication, and oftentimes delivers letters more quickly than merchandise is transported. It also furnishes means by which ship agents can know what ports their vessels have visited.

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[1] The completion of the railway systems in Mexico and the Argentine Republic opens the way for a line to connect the two systems. Such a railway does not seem among the impossibilities, when it is remembered that several sections of the line are already built or surveyed, particularly in Colombia, Bolivia, and Peru. With the building of less than 3,000 miles additional it would be possible to go from New York to Buenos Ayres by rail. Such a line would not only develop the mineral deposits of the Andes, but it would also stimulate a great traffic in the agricultural products of Central and South America.

[2] The route of the Siberian railway will probably begin at Zlatousk in the Ural Mountains, whence it will run, by way of Omsk, to Irkutsk on Lake Baikal; and from there, by way of Srietensk on the Amoor river, to Vladivostok on the Sea of Japan. This port, which will be the Pacific terminus, is about 6,000 miles from St. Petersburg, and 4,000 miles from the starting-point of the road. The country to be traversed by this railway is not unlike the Canadian Northwest. From Omsk to Irkutsk, a distance of 1,000 miles, the proposed route is dotted with villages, and the country well suited to grain-growing.

[3] The interdependence of nations, and the growth of commerce, may be shown by many simple illustrations, such, for example, as would be afforded by the items of a course-dinner, by the contents of a furnished house, by the merchandise exhibited in a grocer's window, or by the articles of a lady's wardrobe. Any of these would make clear how not only the various sections of our own country, but many remote lands, are laid under tribute, and minister, through the medium of commerce, to our daily needs.

A lady's wardrobe, for instance, might include: the straw of her hat, braided in China, exported from Hong Kong, formed in Paris, coming to us by way of Havre; the hat-trimmings of silk and velvet, from cocoons of Italy, France, Japan, or China, manufactured at Lyons; the ostrich plumes from Cape Colony; the diamonds of her ear-rings from Brazil or South Africa, cut at Amsterdam, set perhaps in New York; the lace at her neck made in Belgium, exported from Antwerp; the sealskin sack from Alaska, cured and treated in London, and made up at home; the camel's-hair shawl from northern India; the wrap of Persian lamb's wool; in her hand the carved inwrought fan from Yokohama; gloves of dressed kid from Paris; her watch, perhaps, from Switzerland; her gowns of silk and wool from many possible sources; her garments of linen from Belfast, Brussels, or Amsterdam; her boots of kid from north African skins, manufactured perhaps in France, covered in wet weather by over-shoes of India-rubber from Para, manufactured possibly in Connecticut.

The Telegraph. — For the rapid interchange of thought, the telegraph has superseded the post-office in matters of importance. The first telegraph line, built in 1844, as an experiment, connected Washington and Baltimore. It proved its utility immediately, and now there is not a nation or a colony of consequence that is not connected with the rest of the world by ocean cables or by overland lines. After the great usefulness of the telegraph had been demonstrated, several attempts were made to lay a cable across the Atlantic Ocean, but it was not until 1858 that this was accomplished.[1] The telegraph is used much more in the United States than in any other country. There are over two million miles of telegraph wires in the world, about a third of which are in the United States.[2] The telegraph is of inestimable value to commerce. Goods can be ordered from any part of the world in a few hours by cable, and ship agents can know where their vessels are, almost as soon as they drop anchor.

As a means of economy in sending cable messages, so-called cable "codes"[3]

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[1] There are now several ocean cables, connecting the opposite shores of the Atlantic. The commercial advantages of the submarine telegraph have been so great that the system has been extended to all parts of the world — to Japan and China; Suez and Singapore; Java, Australia, New Zealand, and the Cape of Good Hope. There have thus far been laid more than 100,000 miles of submarine telegraph cables, at a cost of about $1,000 a mile. There is no direct trans-Pacific line. A message from San Francisco to Hong Kong is sent by way of New York, Canso, Penzance, Aden, Bombay, Madras, Penang, and Singapore, — the necessary transfers and repetitions of which could be made in about fifteen minutes.

The most important telegraphic invention of recent years is that by which four or six messages can be transmitted over one wire at the same time, thus saving a vast expense in the stretching and maintenance of wires.

[2] The mileage of wire for telephone use in the United States is estimated at 350,000, connecting 550,000 telephone instruments. Every important city has a telephone exchange, to the central office of which all local telephone wires run; and the "exchanges" of the large cities are connected one with another, by "long-distance" telephone wires. This great invention puts into close communication the buyer and the seller, the office and the factory, the agent and the principal, who can thus mutually transact business almost instantly by word of mouth.

[3] To illustrate this subject, and show how words may be used to represent sentences, a short extract is here given from a code in common use by one of the large banking-houses of New York.

Arrived well; pleasant trip; was not sick	Aberrance
Arrived well; stormy trip; was very sick	Abettor
Arrived well; stormy trip; was not sick; proceed to-morrow	Abigail
No cablegram received	Abjurer
Your cablegram is unintelligible	Abnegator
What is the cause of delay	Abolisher
No information has been received	Absorb
Cannot leave in consequence of	Abstinent
Have you received my letter	Abusive
Letter will contain further particulars	Abutment
How shall we direct your letters	Acacia
Procure letter of credit and send to me at	Accession
Have you received remittance	Accordant
Cannot return until	Accrue
When do you expect to return	Acetate
Write without delay	Acorn
Will write by next mail	Aconite

OCEAN TELEGRAPH CABLES
AND THEIR CONNECTIONS
ATLANTIC OCEAN
PACIFIC OCEAN
INDIAN OCEAN
ARCTIC OCEAN
NORTH AMERICA
SOUTH AMERICA
EUROPE
ASIA
AUSTRALIA
GREENLAND
ICELAND
SPITZBERGEN
NOVA ZEMBLA
NEW SIBERIA IS.
BRITISH ISLES
NEWFOUNDLAND
CANARY IS.
DESERT OF SAHARA
ARABIA
EQUATOR
TROPIC OF CANCER
TROPIC OF CAPRICORN
ARCTIC CIRCLE
MADAGASCAR
JAPAN
PHILIPPINE IS.
CELEBES
JAVA
SUMATRA
NEW GUINEA
TASMANIA
NEW ZEALAND
HAYTI
BARBADOES
Sitka
Victoria
San Francisco
San Diego
Mazatlan
Acapulco
Tehuantepec
La Libertad
Nicaragua
Panama
Port Manga
Guayaquil
Payta
Callao
Lima
Iquique
Antofagasta
Porto Calderas
La Serena
Valparaiso
Montevideo
Buenos Ayres
Rio Janeiro
Pernambuco
Bahia
Recife
Para
Cayenne
Georgetown
Kingston
Havana
Key West
Mexico
Gulf of Mexico
Quebec
Montreal
Boston
New York
Philadelphia
Chicago
Detroit
Lakes
Mississippi R.
Missouri R.
Mackenzie R.
Colorado R.
Columbia R.
Orinoco R.
Amazon R.
Davis Strait
Hudson Bay
Lisbon
Cadiz
Paris
Marseilles
Genoa
Trieste
Brindisi
London
Liverpool
Dublin
Valentia
Brest
Algiers
Tunis
Tripoli
Alexandria
Port Said
St. Louis
Freetown
St. Paul de Loanda
Cape Town
Port Elizabeth
Lorenzo Marques
Delagoa Bay
Zanzibar
Aden
Bushire
Karachee
Bombay
Arabian Sea
Madras
Calcutta
Galle
Bay of Bengal
Singapore
Batavia
Somerset
Albany
Adelaide
Melbourne
Sydney
Auckland
Wellington
Hobart Town
Manilla
Lingayen
China Sea
Canton
Hong Kong
Shanghai
Yang-tse-Kiang
Nagasaki
Yokohama
Vladivostok
Peking
Japan Sea
Amoor R.
Irkootsk
Kirakhta
Astrakhan
Moscow
St. Petersburg
Volga R.
Ural R.
Obi R.
Yenisei R.
Kara Sea
Lena R.
Congo R.
Nile R.
Niger R.
L. Victoria
Danube
Rhone
Seine
Thames
Loire
Tagus
Guadalquivir
Ebro
Douro
Minho
Mediterranean Sea
Red Sea
Persian Gulf
Caspian Sea
Black Sea
Aral Sea
Baltic Sea
North Sea
Irish Sea
Bay of Biscay
English Channel
Gulf of Lyons
Gulf of Genoa
Gulf of Venice
Gulf of Corinth
Gulf of Smyrna
Gulf of Suez
Gulf of Aden
Gulf of Oman
Gulf of Siam
Gulf of Tonquin
Gulf of Carpentaria
Gulf of Papua
Gulf of Guinea
Gulf of Mexico
Gulf of St. Lawrence
Gulf of Alaska
Gulf of California
Gulf of Panama
Gulf of Darien
Gulf of Maracaibo
Gulf of Venezuela
Gulf of Paria
Gulf of Pernambuco
Gulf of Bahia
Gulf of Rio Janeiro
Gulf of Montevideo
Gulf of Buenos Ayres
Gulf of Valparaiso
Gulf of Antofagasta
Gulf of Iquique
Gulf of Callao
Gulf of Guayaquil
Gulf of Panama
Gulf of Nicaragua
Gulf of Tehuantepec
Gulf of Acapulco
Gulf of Mazatlan
Gulf of California
Gulf of Mexico
Gulf of Havana
Gulf of Key West
Gulf of Kingston
Gulf of Colon
Gulf of Panama
Gulf of Port Manga
Gulf of Guayaquil
Gulf of Payta
Gulf of Callao
Gulf of Lima
Gulf of Iquique
Gulf of Antofagasta
Gulf of Porto Calderas
Gulf of La Serena
Gulf of Valparaiso
Gulf of Montevideo
Gulf of Buenos Ayres
Gulf of Rio Janeiro
Gulf of Pernambuco
Gulf of Bahia
Gulf of Recife
Gulf of Para
Gulf of Cayenne
Gulf of Georgetown
Gulf of Kingston
Gulf of Havana
Gulf of Key West
Gulf of Mexico
Gulf of California
Gulf of Mazatlan
Gulf of Acapulco
Gulf of Tehuantepec
Gulf of Nicaragua
Gulf of La Libertad

have been devised. The object of these is to convey in a few words as much information as possible. A great number of cipher codes are in use, composed generally of columns of words or figures answering to every possible emergency. Like the code of signals between ships at sea, ten words, symbols, or numbers may, by pre-arrangement, answer for a message of a hundred words. Even with these economies, the principal cables are scarcely adequate for the transaction of the volume of business and, without them, the cost of submarine telegrams would be greatly enhanced.

QUESTIONS

What is commerce? How was commerce carried on in man's primitive state? What is meant by "division of labor"? What is money? [*Ans.* — Money is a medium for the exchange of values.] Give some account of the duties of consuls. Contrast the pack-horse with the railway locomotive. How does the carrying power of the ocean steamer compare with that of the sailing-vessel of equal tonnage? Name the chief countries of the world in the order of the importance of their tonnage, — in the order of the value of their commerce. What can you say as to the situation of these countries? [*Ans.* — All except the United States are European countries.]

Give an outline of the nature, location, and direction of the trade-winds. What are the main routes of ocean commerce from points on our eastern seaboard? What great coaling-station in the Pacific Ocean? What effect had the construction of the Suez canal upon the coaling-station at St. Helena?

What can you say of early Mediterranean commerce? Name the advantages of an irregular coast-line and of navigable rivers. [*Ans.* — An irregular coast-line affords harbors for shipping, and facilitates intercourse and commerce with foreign countries, while long navigable rivers give great facilities for internal commerce.] Describe the Suez canal. What other canal was undertaken by Count de Lesseps? What great ship canal is now building in England? Between what cities does its course lie? What are its dimensions? What isthmian canal is now being constructed in Europe? What is the Nicaragua canal? What advantages has it over the abandoned Panama canal? What is the aggregate length of the canal systems of the United States? What are the principal lines? What is the length and course of the Erie canal? What can you say of the St. Lawrence canals? Where is the Welland canal? What proposed canal in New England?

Who were the first great road-builders? For what purpose were the Roman roads constructed? What can you say of the highways of Europe? — of South America? — of the United States? Name the principal caravan routes of the present day.

Give some account of the growth of the railway systems of the world. What is the estimated value of all existing railways? What are "trunk lines"? Name the principal trunk lines of the United States. Name several of the more important connecting lines of the Mississippi valley. Describe the Canadian Pacific line. The Panama line. The Tehuantepec line. What beneficial results will follow upon the completion of the railway from Buenos Ayres to Valparaiso? What is the most important railway project of the present day? Where and what is the Trans-Caspian railway?

What is the international postal union? What is the world's total mileage of telegraph wires? What proportion of this is within the United States? What are telegraphic "codes"?

What countries possess the greatest natural advantages for commerce? [*Ans.* — The United States, Great Britain, Japan, and France. These countries possess rich natural resources, favorable climate, and excellent water communication.]

What contrast in location is generally afforded by commercial and manufacturing cities? [*Ans.* — Commercial cities require good harbors and water communications to faciliate commerce, while manufacturing cities depend mostly upon water-power to run their machinery.]

CHAPTER II.

THE REPUBLIC OF THE UNITED STATES

Area and Position. — Exclusive of Alaska, the United States occupies the whole breadth of North America from the Atlantic Ocean on the east to the Pacific Ocean on the west, and extends from the Dominion of Canada on the north (the 49th parallel of latitude forming much of the boundary), to Mexico and the Gulf of Mexico on the south, or to within 100 miles of the Tropic of Cancer. The area is about 3,000,000 square miles, exclusive of the territory of Alaska, which contains 531,000 square miles.

Physical Regions and Natural Resources. — Within its limits may be found every degree of climate, from the rigorous winters of Montana and North Dakota, to the sub-tropical heat of Florida and southern California.

Physically, the United States is divided into the following regions: the *Atlantic coast-plain*, the *Appalachian highlands*, the *Great Central plain*, and the *Western highlands*. The last named division encloses the *Great Interior basin*.

Along the Atlantic coast, east of the Appalachian Mountains, is the Atlantic coast-plain, a belt of fertile land varying from 50 to 200 miles in width. It is divided into small farms, on which a great variety of food-products is grown. Here, also, are many of the great commercial and industrial centres of the United States.

The Appalachian highlands are rich in coal, iron, petroleum, and natural gas. Zinc, nickel, salt, and gold are obtained in paying quantities. Marble, slate, and building-stone are extensively quarried.

The Gulf coast-belt is low, level, and very productive. Cotton and sugar are the leading products. More than two-thirds of the world's supply of cotton is grown here.

Between the Appalachian and the Rocky mountains lies the Great Central plain, which, drained mainly by the Mississippi River and its branches, forms the most important agricultural region in the world. The Mississippi, with its tributaries, drains more than half of the area of the United States, and intersects or borders on two-thirds of the states and territories, thus supplying a waterway for an extensive internal navigation aggregating about 15,000 miles. The basin of this river-system is the greatest grain and meat-producing region in the world, and is the source of much of the food supply of Europe as well as of the United States.[1]

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[1] Although the name Mississippi is geographically given to the main stream together with that one of its three principal affluents which takes its rise in Minnesota, yet above their junction the

Northeast of the Mississippi system is the basin of the St. Lawrence River and the Great Lakes. This river forms a commercial highway second in importance to the Mississippi system. At the extreme western end of Lake Superior is Duluth, nearly 2,000 miles from the sea, yet by these lakes, and by the Erie canal, Duluth can send grain or other products to tide-water without a single trans-shipment. Much of the marvellous development of the upper Mississippi valley is due to the cheap transportation afforded by these water-ways. Were the Erie, or the Ottawa and the Welland canals enlarged, as is proposed, all trans-shipment could be avoided.[1]

The Western highlands, and the region known as "The Plains," are arid. The former first became famous as a rich mineral country. In both regions, grazing has been introduced, and of late years, chiefly by the adoption of systems of irrigation, agriculture has been carried on with success in some parts.

On the Pacific slope, between the Sierra Nevada Mountains and the coast, is one of the most highly productive areas in the world. This region is a strip of land, from one hundred to three hundred miles wide, extending nearly the whole length of California. Irrigation is carried on more extensively and skillfully here than in any other part of the world. Vegetables and fruits of nearly every variety grow to great perfection.[2]

Missouri river is much more important to commerce than is the Mississippi. Regarding the Mississippi system as a whole, there are no less than fifty-seven branches which contribute their waters to the principal stream. Of these, the Missouri and the Ohio are by far the more notable.

The Mississippi is navigable to the Falls of St. Anthony, near whose great water-powers are St. Paul and Minneapolis, and on its banks are Davenport, St. Louis, Cairo, Memphis, Vicksburg, and New Orleans.

The Missouri is navigable for more than 2,000 miles. Its chief ports are Kansas City, St. Joseph, Omaha, and Jefferson City.

The Ohio has its sources on the western slopes of the Appalachian Mountains, and among the important commercial centres upon its course are Pittsburg, Wheeling, Cincinnati, and Louisville. Among other tributaries of the Mississippi, important to commerce, are the Iowa, Des Moines, Red, Wisconsin, Arkansas, and Illinois rivers.

[1] A considerable part of the price of all commodities is due to the expense of transport. Other things equal, the shorter the distance and the less the handling and trans-shipment, the lower the price. The great staples, such as coal, petroleum, and the cereals, can be brought from the producing fields to seaboard markets without "breaking bulk," if sent by rail. If for export, trans-shipment to the ocean steamer is necessary. Grain for export is now transferred directly from the "canaller" to the steamship by means of great steam elevators. Coal is often trans-shipped by the device of opening hinged doors in the floor of cars, thus dumping the coal into the hold of the steamship beneath.

The extension of their terminal facilities in the port of New York now under way by the Baltimore and Ohio, the Lehigh Valley and the Pennsylvania railways, thereby bringing their freight business to deep water, will effect great saving of labor, and lessen the cost of transportation by saving in the handling and lighterage of merchandise.

[2] American raisin and wine interests are almost exclusively confined to California. The wine produced in Ohio and New York makes little figure in the industrial statistics of the nation. The 950,000 boxes of raisins and the 20,000,000 gallons of wine produced in California, in 1888, suggest the possibility of the future, when we consider that only one-fifth of the area of that state suited to raising grapes is now covered with vines.

Population and Occupations. — The population of the United States (1895) is about 65,000,000. In 1790 the population was less than 4,000,000, and was confined to the region along the Atlantic coast. The centre of population was then near Baltimore; it is now fifty miles southwest of Indianapolis. Three-fourths of the growth of population, apart from the natural increase, has come from the British Isles and Germany.

Nearly half the population of the United States is dependent upon tillage of the soil, and about one-fifth of the agricultural products of the world are grown within the limits of our country.[1] One-fourth of our population is dependent for employment upon the factories and mines.

QUESTIONS

What is the general situation of the United States? What is its area, exclusive of Alaska? What can you say of the climate? What are the great physical regions? Describe the Atlantic coast-plain, — the Appalachian highlands. Give some account of the Mississippi basin, — of the Western highlands. What is the most important commercial characteristic of the Atlantic coast-plain? [*Ans.* — It contains most of our great seaports.] What is noteworthy in respect to the Appalachian mountain system? [*Ans.*—It is the region of valuable mineral deposits.] What is the leading industry of the Gulf states?

Give a general description of the Great Lakes and St. Lawrence system. For what great staple product does this system afford transportation? What can you say of the region west of the Mississippi? What is the general nature of the Pacific slope? What are its chief products?

What is the population of the United States? What has been its growth during the present century? What proportion of the population is dependent upon agriculture? — upon factories and mines?

I. — RAW PRODUCTS

Cotton. — The United States produces certain raw materials, such as cotton, wheat, tobacco, and copper, in greater quantities than any other country in the world; though it is slightly exceeded by Great Britain in the output of iron, and closely approached by Russia in the production of wheat.

Of the raw products, cotton is commercially the most valuable. In 1894 the cotton exported formed a fourth in value of the total exports. Cotton grows in nearly all countries where the climate is sufficiently warm, and from the earliest days of history it has been woven into fabrics. But not until the development of the American plant and the invention of the cotton-gin did cotton become of great

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[1] The United States produces about one-fourth of the wheat grown in the world. Until 1849 more than one-half our product was confined to the New England and other Atlantic states; 13 per cent. were grown in the Middle states; and only 5 per cent. in the states and territories west of the Mississippi River. Wheat-growing has moved westward at the rate of about nine miles a year. In the Eastern states, less than 15 per cent. are now grown; in the Middle states about 40 per cent.; in the Western states upwards of 45 per cent.

commercial importance. American cotton is superior to that of any other country. Many attempts have been made to ingraft its good qualities upon the cotton-plants of India and other regions, but without success. Sea-island cotton is raised on the islands off the coast of South Carolina, Georgia, and Florida, and is the finest quality grown. This Sea-island plant loses in quality when transplanted to the mainland. The cotton-producing states, in the order of the amount grown, are: — Texas, Georgia, Mississippi, Alabama, South Carolina, Arkansas, Louisiana, North Carolina, Tennessee, Florida. This order may change somewhat in different years. The states of Missouri, Indian Territory, Virginia, and Kentucky also produce cotton to a limited extent. The total value of the cotton exported in 1894 was $210,000,000.

Cotton-seed and its Oil. — The seed of the cotton-plant was for many years regarded as useless, and, to be disposed of, was generally burned. Later, it was returned to the soil as a fertilizer. Then it was ascertained to be nutritious food for animals, and that it contained a large proportion of oil. The cotton-plant is estimated to produce three hundred pounds of seed to one hundred pounds of fibre. A hundred pounds of seed averages a yield of two gallons of oil, forty-eight pounds of oil-cake or meal, and six pounds of refuse, which is an excellent material for soap-making. After the oil is extracted the meal is more valuable as a fertilizer and as food for cattle than before. The hull of the seed is an excellent fuel, and the ash of the hull is of commercial value for the manufacture of potash. The various products of cotton-seed are of comparatively recent development, having first come into notice in 1852.[1]

Breadstuffs. — Breadstuffs are second in value among the exports of the United States, and in 1894 formed a sixth of the total value of the exportation.

Wheat and wheat-flour form all but a small fraction of the breadstuffs exported. Wheat is raised in nearly every country in the world, and is the main article of food in most civilized nations. Only two of the great nations of Europe, Russia and Austria-Hungary, produce more wheat than the home market demands. The United States is the greatest wheat-producing nation in the world, and is the main source of supply to consuming nations. The states of the Mississippi system raise nearly all the wheat exported. Wheat is grown in every state and territory in the Union; but the largest sources of supply are: — North and South Dakota, Indiana, Illinois, Minnesota, Ohio, California, Iowa, Missouri, Michigan, Nebraska, Oregon, and Wisconsin.

Corn is indigenous to America. It grows in nearly all parts of both North and South America, and is a leading article of diet in the Spanish-American nations, and in Spain, Portugal, and Ireland. Corn and corn-meal rank next to wheat and wheat-

[1] Cotton-seed oil has found many uses. When highly refined it is the equal of olive oil, and has very generally superseded it in use. The stearine, or fatty part, of the oil is used in the manufacture of a compound called butterine, and also in the adulteration of lard. Most of the oil, oil-cake, and oil-meal of commerce comes from the United States. The commercial value of the cotton-seed exports in 1894 was over $8,000,000 for the cake and meal, and more than $6,000,000 for the oil.

flour among breadstuffs as exports. Besides being extensively used for food, and in feeding cattle and other animals, corn is also used for the manufacture of alcohol, whiskey, glucose, and starch.

Corn is the most extensive food-crop grown in the United States. The chief sources of supply are in the states of the Mississippi Valley, and particularly in those states that were formerly the leading wheat-growing states. The bulk of the crop comes from Iowa, Illinois, Missouri, Nebraska, Texas, Kansas, Ohio, Indiana, Tennessee, Kentucky, Arkansas, Georgia, Pennsylvania, and North Carolina.

Oats, *rye*, and other grains are of but little value as exports. The total value of breadstuffs exported in 1894 was about $159,000,000.[1]

Other Food Products. — Other food-products exported include live animals, dressed meat, and dairy products. The animals and meat-products come chiefly from Texas, Wyoming, Montana, Colorado, Iowa, Indian Territory, New Mexico, Kansas, and Nebraska. In these states and territories there are vast ranges where cattle are raised for beef and hides.

The dairy products come chiefly from states farther east, where dairy-cattle are raised. New York, Ohio, Illinois, Michigan, Wisconsin, and Iowa are the states most noteworthy for their dairy products.

One of the recent inventions of science is that of extracting oil from beef fat. The oil, when churned with milk, makes an artificial butter called oleomargarine. In many of the large cities the surplus milk is utilized in making this article. Its natural color is like that of lard, but the product is always colored so that only a scientific test can distinguish it from dairy butter. A cheap grade of cheese is made by a similar method. There is great demand for these articles, particularly among the poorer classes of Europe.

Mineral Oil. — Mineral oil, or petroleum, is produced in Pennsylvania, New York, Ohio, and California.[2] Most of the oil is transported to the seaboard through pipe-lines which extend from the oil-fields to the vicinity of New York and Philadelphia, where the oil is refined.[3]

The annual export has a value of about $50,000,000.

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[1] The corn crop of the United States in 1894 was more abundant and better in quality than any previous crop. More than 2,000,000,000 of bushels were raised on 75,000,000 acres of land. The crop was valued at nearly $700,000,000. 3,000,000 cars loaded with 662 bushels each would be required to move this immense yield to the seaboard.

[2] The Eastern oil-region extends from Wellsville, N.Y., across Pennsylvania to Dunkard Creek, West Virginia, a distance of 204 miles, and so far as developed, the belt is about ten miles in width. The yield of the oil fields to 1895 was over 550,000,000 barrels. It is estimated that the Ohio field might be made to yield 100,000 barrels a day. This oil is worth about one-seventh as much as the Pennsylvania product, and its utility in the world's economy lies in the direction of fuel. The California oil is superior as fuel, but inferior in illuminating qualities to that of Pennsylvania. Natural gas is the only fuel that can compete with it in cheapness, but natural gas cannot be transported much over 100 miles.

[3] From the discovery of petroleum in 1859 until 1866, the oil was transported in oaken barrels. The cost of transportation from Titusville to New York, and the return of the barrels, was $5.55 per barrel. In 1866, a barrel of oil in New York cost $10.40. Flat cars, upon which two wooden tanks were built, were introduced in that year, and the oil was transported in bulk. In 1871 iron tanks superseded those of wood. On the Ohio and Alleghany rivers, barges containing large tanks

Tobacco. — Tobacco, like corn, is indigenous to America, but is now cultivated very extensively in other parts of the world. It is an important article of commerce, and has been an export of our country from colonial times. The chief tobacco-raising states are Kentucky, Virginia, Pennsylvania, Ohio, Tennessee, and North Carolina. Tobacco also forms an important crop in the valley of the Connecticut river. The value of the yearly crop of tobacco in the United States is about $40,000,000; about half of the product is exported in unmanufactured condition.

There are 8,000 establishments in the United States engaged in the manufacture of chewing and smoking tobacco and cigars, from the domestic and imported article, and the value of the manufactured products is nearly $130,000,000 yearly.

Lumber. — Nearly every state in the Union has forest area, but lumbering to any considerable extent is limited to a few states. Michigan, Wisconsin, Minnesota, Pennsylvania, and Maine are seats of the lumbering interests east of the Rocky Mountains. Yellow pine is an important forest-product in Georgia and the Carolinas. Half of the forest area of the country is in the Southern states. The lumber product of the Pacific slope comes mainly from Washington and Alaska, although Oregon and California contribute largely to it. The forest area of Washington is estimated to equal the aggregate area of New Hampshire, Vermont, Massachusetts, and Connecticut. Alaska has vast areas of untouched forest. Heretofore the belt of timber extending from Maine to Minnesota has furnished the greater part of the supply of white pine consumed in the United States; but so great has been the depletion of these forests that, in many localities, comparatively little merchantable timber is now standing. No attempts to restock the forests have been made, and, in most instances, after the pine has been cleared from an area, scrub oak and not pine is the succeeding growth. On account of the growing scarcity of pine, other timber and other material that may be utilized in its place are now sought.

Manufactures of Wood. — In 1894 the export of wood and wood-manufactures was of the value of $27,000,000, the principal items of which were: [1] boards, deals, and planks, [2] household furniture, [3] sawed timber, [4] staves and headings, [5] shooks, [6] hewed timber, and [7] hogsheads and barrels. Wood, however, forms an important element in the manufacture of articles so numerous as to be beyond the reach of classification under this head. Agricultural implements, machines, and musical instruments, are such articles. A considerable part of our exports to South America is manufactures of wood in this sense. The domestic consumption of the same manufactures is, of course, vastly more important. A glance about the class-room, with its chairs, desks, benches, settees, and tables, or a similar survey of the furnishing of any house, will show that manufactures of wood are among the prime necessities of civilized life.

Iron. — Iron and its various products are rapidly becoming leading exports. Deposits of iron ores are found in nearly all parts of the United States, and the

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were used to carry the oil. The first pipe-line from the oil-fields to the seaboard was completed in 1881. Since then numerous other pipe-lines have been built, at a cost of $15,000,000. The pipes are carried along the surface of the ground, and pumping-stations are established at intervals of about 28 miles. The total length of these pipe-lines approaches 2,000 miles. The principal lines are from Olean, N.Y., to Bayonne, N.J., and to Brooklyn; and from Colegrove, Pa., to Philadelphia, with a branch to Baltimore. Another line runs from near Olean to Buffalo, and one from Colegrove to Cleveland. These lines reduce the cost of transportation to about 45 cents a barrel.

mining of these is carried on in 26 states and territories. The largest amount of ore is mined in the Lake Superior region embraced in the states of Minnesota, Michigan, and Wisconsin. The southern fields in the states of Alabama, Tennessee, Virginia, and Georgia hold a second place, but will probably soon rise to first.[1] Western Pennsylvania is third, and the Lake Champlain district in New York, fourth.

The smelting of iron, and the manufacture of iron and steel, are most extensively carried on in western Pennsylvania, northern Illinois, Missouri, and Ohio. In the manufacture of steel the United States is now the leading nation in the world. During the decade ending 1890, the chief development of this industry was in Alabama and Georgia.[2]

Iron and steel enter into the manufacture of innumerable articles, both of domestic trade and export. Our exports of these manufactures in 1894 were in value nearly $30,000,000, the principal items in the order of value being machinery, agricultural implements, sewing-machines, saws and tools, builders' hardware, clocks and watches, and firearms.

These exports consist largely of manufactures requiring the best mechanical skill, and many of them come from the workshops of Philadelphia and other portions of Pennsylvania. The ability of the iron manufacturers of Pennsylvania to compete successfully in the higher departments of industrial production is demonstrated by the amount of these exports which are sold in the open markets of the world in competition with the best that Europe can produce.

Leather. — Within the last quarter of a century cattle-raising has greatly increased in the United States. The uses of leather have not kept pace with the

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[1] In 1894 the pig-iron production of Alabama, Tennessee, Virginia, Georgia, and West Virginia aggregated about one and one-quarter million tons, the principal increase over the product of preceding years being confined to the three states first-named.

From 1789 to 1842 the lowest quotation per ton for pig-iron was $28 in 1803, and again in 1841; while the highest was $55 in 1815. In 1850 the price fell to $20, rose to $38 in 1854, and fell to $18.75 in 1861. Then came inflation, and the price rose to $73.62, in 1864, and did not get back to $20 again until 1877. Since the beginning of 1885, the price has been almost constantly below $20.

About 75 miles southwest of St. Louis is a remarkable deposit of ore called Iron Mountain, which is about 250 feet high. At the summit is an enormous mass of solid ore. Near by is another iron mountain, called Pilot Knob. It is three times as high as Iron Mountain, and the diameter at the base is one mile. It is estimated that about one-tenth of these mountains is iron ore. Incomplete surveys indicate that Utah is richer in iron than any other section of our country. In Iron County alone there are ten iron mountains, estimated to contain 130,000,000 tons of iron ore of excellent quality.

[2] The tendency now is to substitute steel for nearly all uses for which iron was formerly employed. The old methods of making steel were very uncertain and costly. Bessemer's invention greatly reduced this cost, but his process required iron ore almost free from phosphorus and sulphur compounds. The world's supply of such ore outside the United States is now very limited, and comes mostly from Cuba, Elba, and Spain. In this country the Lake Superior ore is Bessemer quality, and there is a great deal of Bessemer iron in the South.

Most of the iron in the world has from one to five per cent. of phosphorus, and to utilize this iron the so-called basic process of making steel has been introduced. Only basic steel is now made in Germany and France, and the same kind for the most part is produced in Great Britain. For many purposes this steel will supplant Bessemer, as it is equally serviceable and cheaper; but it will not drive Bessemer out of the market, since there are some uses for which Bessemer steel alone is suitable.

increase in the demand for beef, and leather has, in consequence, become an article of considerable export. The raw hides come mainly from the plains of the west, where are situated the great grazing areas. The leather is tanned principally in those states where forests of hemlock and oak that furnish tanning material are most abundant, — namely, Pennsylvania, New York, Maine, Michigan, and New Hampshire. In 1894 the export of leather and of leather goods was more than $14,000,000 in value, the principal item being boots and shoes.

Furs and Fur Skins. — Of the fur skins exported from the United States, seal skins are the most valuable. Others are beaver, otter, and the pelts of similar animals, either from Alaska or the mountainous regions of the west. The most important rookeries of fur seals in the world are on the Prebiloff Islands in Bering Sea, the output of which is regulated by the United States government. The Bering-Sea rookeries furnish over three-quarters of the world's supply of seal skin. A few skins come from the region about the Shetland Islands. From the other seal fisheries of the world, particularly those of the north Atlantic Ocean, the skins procured are those of the hair seal, which are caught solely for making leather.

Coal. — The United States is but little behind Great Britain as a coal-producing nation.[1] The English coal is mainly bituminous, or soft coal; about one-third of that produced in the United States is anthracite, or hard coal. Deposits of this mineral, as in the case of iron, exist in nearly every state in the Union, but the amount produced comes mostly from a few states. Pennsylvania supplies nearly all the anthracite coal of commerce. This state is also by far the largest producer of bituminous coal in the Union. Other leading coal-producing states are Ohio, Illinois, Kentucky, West Virginia, Tennessee, Alabama, Indiana, Iowa, Kansas, and Missouri. Comparatively little coal is mined on the Pacific slope, and that chiefly in Washington.

Copper. — Some of the most valuable deposits of copper in the world are found in the United States. They are in Michigan, Montana, and Arizona.[2]

[1] The total annual production of coal in the world is put by a high authority at from 430,000,000 to 450,000,000 of tons. The United States produced 130,000,000, and the state of Pennsylvania half of this amount. Little coal is exported from the United States except to Canada, which takes about 3,000,000 tons annually. Considerable quantities of coal are in turn imported by us from Canada, but this is chiefly for the supply of the Pacific coast.

Professor Thurston says that the coal-producing area of the world is about 400,000 square miles, of which three-quarters are in the United States, and one-fortieth is in Great Britain. This estimate, however, makes but little account of the vast coal-bearing areas of China, the extent of which, though somewhat conjectural, is known to be many times that of all European countries, taken together.

The most extensive coal-mining operations of our southern states are carried on by the Tennesseee Coal, Iron, and Railway Company, which controls the mines of the Sequatchee valley, whose business centre is Tracy City. This company employs thousands of men, and its total coal output is about 8,000 tons per day.

[2] The output of these, as well as of most of the European mines, is regulated by the *Société des Métaux*, a French "trust" which, for a number of years, has controlled most of the copper mines of the world.

STANDARD TIME:

By an agreement of the Railways, Nov. 18, 1883, the Country was divided into four Time Divisions of fifteen degrees of longitude each, making one hour's difference in the time of each. The 75th degree of longitude is the meridian of the Eastern Time Division; the 90th degree of longitude that of the Central Time; the 105th degree of longitude for the Mountain Time and the 120th degree that of the Pacific Time.

The dividing lines between the belts of Standard Time would be 7½ degrees on either side of the Standard Time meridians, but as these arbitrary lines would be impracticable in the actual management of railroads, the line of demarcation is so modified as to meet the needs of the various railways, and the result is the irregular areas of the different Standard Time Divisions as shown on the map.

Chart
SHOWING THE CHIEF
MINERAL REGIONS
OF THE
UNITED STATES

Shaded Areas indicate Coal Measures.

105 Longitude West from 90 Greenwich

R.D. Servoss, Eng'r, N.Y.

Numerous other deposits of this metal exist, but those named are so extensive that they practically regulate the price of copper for the world. The uses and applications of copper have been greatly extended and stimulated by the active development of these mines. There are also great deposits of copper in Utah, Colorado, and New Mexico.

The raw products of the United States, thus far considered, constitute over 90 per cent. of the total exports of our country. Cotton, raw and manufactured, together with food-stuffs, forms more than two-thirds of our exports in value. Of our total exports of breadstuffs, provisions, petroleum, cotton, and tobacco, Great Britain takes annually nearly two-fifths; and the other countries of Europe about three-tenths.

Nearly all the minerals of commerce are produced in the United States. The more important in the order of their value are coal, iron, silver, gold, building-stone, lime, copper, petroleum, lead, zinc, and quicksilver. Our country leads all others in the value of its mineral products. But some minerals are mined to so small an extent, or our manufactures of them require such a large supply, that importation is resorted to. These are tin, iron, sulphur, lead, and platinum. The mineral products exported are mostly petroleum, copper, and quicksilver.[1] In iron, gold, silver, and copper, the United States is the greatest producer.

Fisheries. — The fisheries of the United States are more valuable than those of any other nation, and give employment to nearly 150,000 men. Massachusetts and Maine carry on nearly one-half of the general fisheries, though New York, Maryland, and California have considerable fishing-fleets. These include both shore and deep-sea fisheries. The large fleet of vessels engaged in cod-fishing on the Grand Banks east of Nova Scotia is chiefly from Massachusetts.[2] The salmon fisheries of Oregon are of great value, though in Alaska there are rapidly developing the most extensive salmon fisheries ever known.[3]

Massachusetts vessels do most of the whale-fishing of the world, though California has recently engaged extensively in this industry. Nearly all the sperm oil of commerce, and most of the whale-bone and whale oil, is got by steam-whalers from these two states. The most valuable whale fisheries are off the northern and western coasts of Alaska.

The most important and extensive oyster-beds in the world are in Chesapeake Bay, and along the coast of Virginia.[4] These are natural beds. In several places

[1] The development of the mineral resources of the United States in 1892 reached the highest mark it has ever attained. The total value of the non-metallic products this year was approximately $379,000,000; of metallic products $307,000,000; and of unspecified metallic products $1,000,000, making an aggregate of $688,000,000. The greatest previous output was in 1891, when it reached in round numbers $657,000,000, and fell away in 1893 to $609,000,000. Either total is greater than the aggregate value of the output from the mines of all Europe.

[2] The United States Fish Commission has entered extensively into the hatching of codfish eggs, for restocking the coast of New England with in-shore cod. If the Commission succeed, codfish will eventually be more plentiful on the coast of New England than they were years ago, and a lost industry worth millions of dollars will be restored.

[3] Important fishing-banks extend along the coasts of Washington and Vancouver Island, at points easily accessible from the ports of Puget Sound. These banks swarm with halibut and cod.

[4] The oyster industry is Maryland's greatest natural source of wealth. The beds cover about 120,000 acres, and the catch per year is 10,000,000 bushels, yielding about $2,000,000 to 50,000 people.

along the coast, artificial beds have been planted, particularly on the shores of New Jersey, Long Island, Connecticut, Rhode Island, and Massachusetts, and these are now second in value to the Chesapeake Bay beds. Oysters have been planted on the coast of California with some success.

QUESTIONS

What natural product of the United States is commercially the most valuable? Which are the more important cotton-growing states of the Union? What uses is the seed of the cotton-plant put to? What export of the United States is second in value to cotton? What is the principal breadstuff that we export? In what states is the great bulk of wheat produced? What states are the chief sources of our supply of corn? What other food products of the United States are important articles of export? What is oleomargarine?

In what states of the Union are the great petroleum fields? How is the greater part of the petroleum product carried to the seaboard? What is the value of our annual export of petroleum?

What are the chief tobacco-raising states? What is the estimated value of the yearly crop? What proportion of this crop is exported in unmanufactured condition? What is the value of the manufactured products of tobacco of the United States? [*Ans.* — About $130,000,000 per annum.]

What are the leading lumber-producing states? Where are the most important pine forests? In what section lies half our forest area? What can you say of the lumber regions of the Pacific coast?

What are the chief items of export in wood and wood manufactures? What can you say in general of the ways in which wood enters into manufacture?

What can you say of the deposits of iron ores in the United States? Where are the largest of these deposits? What can you say of the southern iron fields? What state leads in the conversion of iron into steel? What was the value of exports of iron and steel manufactures in 1894? Name some of the principal items of this export.

Whence do we derive our chief supply of hides? In what states is most of the tanning industry carried on? Why? What is the value of our export of leather? — of the manufactures of leather? What is our most valuable export in furs and fur skins? Where are the greatest seal-fisheries?

Contrast our coal product with that of Great Britain. What is the source of the anthracite coal supply? Which state produces the largest amount of bituminous coal? Where are the most important deposits of copper ore?

Name the ten raw products of the United States which constitute the great bulk of our exportations. Name two staples that form two-thirds of our exports in value. Among foreign countries which is our greatest customer? To what countries do seven-tenths of our exports go? [*Ans.* — To the countries of Europe.]

Name our most important mineral products. Which two of these are the most valuable? What minerals do we import? Why? Name three mineral products which we export.

What is the estimated number of men engaged in our fisheries? Which two states carry on nearly one-half of the general fisheries? By whom are the cod fisheries carried on? Where are the salmon fisheries? Which two states lead in the whale fisheries? Where are the most valuable of these situated? Where are the most important oyster-beds in the world?

II — MANUFACTURES

General View. — Manufacturing has developed marvellously in the United States in the past twenty-five years. At first, only the coarser grades of wares were made; but by the substitution of machinery for hand labor, a degree of perfection has been reached in many industries that is not equalled in other parts of the world.[1] This is particularly true in the manufacture of sewing-machines, watches,[2] clocks, fire-arms, and like mechanisms, where an interchange of parts is made possible by the exactness of machine work. The mechanical and inventive genius of the people of the United States is particularly trained in and directed toward the practical application of new principles. Many of the most remarkable labor-saving machines in use in the world to-day are of American origin. Among these are the cotton-gin, the telegraph, the telephone, the applications of electricity for purposes of illumination and power, sewing-machines, agricultural implements, and wood-working and shoe-making machinery.

Statistical Outline. — The United States does as large a part of the world's manufacturing, as it does of the world's agriculture. There are 320,000 manufacturing establishments, employing 4,700,000 hands, and having an annual product of the value of nine thousand millions of dollars. By far the greater part of the manufacturing of our country is at present done in the states north of the Potomac and Ohio rivers, but manufactures of iron, steel, and textile fabrics have been recently developing extensively in the South. The leading states in manufactures, in the order of their importance, are: 1, New York; 2, Pennsylvania; 3, Massachusetts; 4, Illinois; 5, Ohio; and 6, New Jersey. The working power[3] employed in our manufactures is about twice that of Great Britain, three times that of Germany, and more than three times that of France.

Leading Manufactures by States. —*New York* is the leading manufacturing state, as it is the most populous, besides having extraordinary natural advan-

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[1] The success obtained by mechanical devices for labor-saving is well illustrated in the manufacture of shoes. It is now possible to cut shoes from the leather, and carry them through the successive stages of manufacture so as to fit them for wear, in the space of one hour.

[2] The American watch is on the whole a better, as well as a cheaper, watch than any other, and foreign-made watches are much less used to-day in the United States and Canada than formerly. The great merit of the American watch is its uniform excellence. The machine which makes any portion of a watch faultlessly can make ten thousand similar portions just as faultlessly. By means of micrometric gauges, any deviation to the one ten-thousandth part of an inch can be detected in the machine. Human hands cannot rival this exactness. It is the unfailing, unerring accuracy of exquisitely perfect machinery which gives uniform quality to the American watch. In 1860 the various American watch companies produced only 15,000 watches, but in 1888 they made nearly 6,000 a day.

[3] When steam-engines were first introduced, the amount of work they could do was compared with the amount of similar work that had previously been done by horses. Hence the expression, horse-power. A horse-power is estimated as the power required to raise a weight of 33,000 pounds one foot in one minute.

tages for its varied industries. The principal manufactures are, clothing, iron-and-steel products, sugar-refining, tanning-and-leather products, and malt liquors.

Pennsylvania is the second state in the importance of manufactures, and the first in iron-and-steel products.

Massachusetts is the great cotton manufacturing state. Boots and shoes are also an important product.

Illinois possesses great iron-and-steel-mills, but is more particularly noted for the products of its meat-packing establishments.

Ohio has large iron-and-steel and agricultural machinery works.

New Jersey is the leading state in the manufacture of pottery and silk goods. It is also the seat of large linen, cotton, rubber, and leather industries.

Indiana has numerous wood-working factories of various kinds, principally for the production of farm implements.

Wisconsin's chief manufactures are metal wares and malt liquors.

Missouri, like Illinois, is famous for its meat-packing establishments. Other important industries are iron-and-steel manufactures, and malt liquors.

Michigan is the seat of great wood-working industries, the most important branch of which is that of making household furniture.

Connecticut is famous for its metal-working industries, which are in great variety. Among the leading products are brass goods, cutlery, and plated ware.

Rhode Island, though the smallest state, is industrially the most important in proportion to its area and population. It has many great woollen and cotton factories.

In the southern states, a great development of cotton-spinning has taken place in recent years. The increase in the number of spindles was from about half a million in 1880, to a million and a quarter in 1887. Steamers from Charleston, Wilmington, and Savannah now carry cotton goods where formerly they took only raw cotton; and southern mills export cotton fabrics in great quantity to China, thus competing actively with the mills of New England. The average yearly increase of the number of spindles since 1888 in the United States is over 300,000.

QUESTIONS

What can you say of the development of our manufactures? What is the number of establishments? — of factory-hands employed? What is the value of the annual product? In what section of the country is the greater part of the manufacturing done? Name the leading manufacturing states in the order of their importance. Contrast the working power employed in our manufactures with that employed in Great Britain, — in Germany, — in France.

What are the principal manufactured products of New York? — of Pennsylvania? — of Massachusetts? — of Illinois? — of Ohio? — of New Jersey? — of Indiana? — of Wisconsin? — of Missouri? — of Michigan? — of Connecticut? — of Rhode Island? What can you say of cotton-spinning and other industries in the southern states?

III. — COMMERCE OF THE UNITED STATES

Historic Outline. — Long before the British colonies in America became the United States, a considerable commerce was carried on with the mother country. Whaling and fishing were also pursued with great energy. The hardy people of New England made the best of sailors. At the outbreak of the Revolution, in 1776, the merchant fleet of the colonies was of considerable size. These vessels were as stanch as oak and honest labor could make them, and at the beginning of hostilities most of them were converted into war vessels. Insignificant as their number was, in comparison with the British fleet, the skill and resolution of the crews made up for the lack of ships.

With the declaration of peace commerce increased rapidly. The almost continual wars which for thirty years had devastated Europe, had thrown much of the carrying-trade of the world into the hands of American sailors.[1] But the battle of Waterloo finally brought a general peace; commerce revived; and the various nations of the continent struggled for supremacy in it.

The Americans proved themselves most skilful sailors, and their disposition for trade kept their vessels busy. Shipbuilders vied with each other in constructing vessels of great speed, and in 1860 the tonnage of the merchant marine of the United States was nearly equal to that of Great Britain. Many clipper ships belonged to this fleet. They were then the swiftest vessels ever built, and competed closely for the honors which for over a century had been held by the English.

The civil war in America broke out at the critical time when steam was fast superseding the sail; and while our commercial development was interrupted by this war, the trading nations of Europe were adding to their merchant marine fleets of swift ocean steamships.

During the last quarter of a century the energies of the people of the United States have been devoted to developing the resources of the country, somewhat at the expense of the merchant marine. European nations have fostered commerce by discriminating laws and by judicious subsidies, but our own government has done little to encourage ship-building or to promote our trade. In 1894 less than one-tenth of the carrying trade of the United States was done in American vessels, as against three-fourths of it in the year 1856. The chief natural products of our country have now been developed to such an extent that a large fleet of American ships is needed to distribute them to consuming nations.[2]

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[1] In September, 1787, the ship *Columbia*, in company with the sloop *Washington*, sailed from the United States for the northwest coast of America, and the following year they reached their destination. From there the *Columbia* sailed for Canton with furs, made a successful voyage, and returned to Boston in August, 1788. These two vessels were the first to circumnavigate the globe on a trading-voyage. The *Washington* was of only ninety tons, and was the first sloop of any nation sent on so long a voyage.

[2] In 1789 the exports from the United States amounted to $20,205,000. In 1888 the exports

Manufactures, too, have reached a stage of development where certain of them more than supply the home demand, and new markets must be sought in order to dispose of the annual surplus. The principles of true commercial economy require that a nation like the United States, which is not only the most wealthy on the globe, but the possessor of the largest possibilities for future greatness, should have a merchant marine of a capacity in keeping with this greatness. No other country is so well situated, naturally, to carry on a large external commerce as is the United States. It has a coast-line nearly equal in extent to that of Europe, and on this coast are some of the finest harbors in the world.

The facilities for internal commerce, both natural and artificial, are greatly superior to those of Europe. Besides the 15,000 miles of navigation furnished by the Mississippi River and its tributaries, the Great Lakes afford 1,500 miles of navigable waters. Along the coast are numerous rivers that are navigable to a limited extent. The government has been lavish in its expenditures to remove obstructions in these rivers and otherwise improve them for navigation.

Waterways. — The general government, and the various state governments, have encouraged the building of canals. The most important of these is the Erie canal, which, with its connections, furnishes cheap transportation to market for the products of central and western New York, and for the grain and other products of the region tributary to the Great Lakes.[1] Other canals of importance are the Champlain, which connects Lake Champlain with the Hudson River; the Chesapeake and Delaware Canal, connecting the head of Delaware Bay with the head of Chesapeake Bay; the Delaware and Raritan, connecting the Delaware River with the lower harbor of New York; the Miami Canal, from Toledo on Lake Erie to Cincinnati; the Ohio Canal and its branches, from Cleveland on Lake Erie to Portsmouth on the Ohio River; the Wabash and Erie Canal, from Evansville on the Ohio River across Indiana, and connecting with the Miami Canal; the St. Mary's Falls Canal,

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were $683,860,000 and in 1894 $972,861,000. The leading items of export for 1789, as compared with the same items of 1888 and 1894, were: —

	1789	1888	1894
Flour	$4,591,000	$50,224,000	$69,271,000
Wheat	1,399,000	44,152,000	59,407,000
Corn	1,084,000	18,573,000	30,211,000
Tobacco leaf	4,349,000	20,945,000	24,085,000
Rice	1,754,000	25,000	not reported
Cotton	58,000	225,122,000	225,210,000

[1] Constructed as a state work, the Erie canal was a few years ago made free. During the time it exacted tolls, it not only paid back to the state its cost of construction and all the expenses of its maintenance and improvement, but a handsome interest on the investment besides. It has as feeders the Oswego and Black River, and the Cayuga and Seneca canals. The canal floats about 2,000 boats, each with a capacity of 8,000 bushels of grain, or a corresponding bulk of other products; and the round trip between Buffalo and New York consumes about a month. The improvements making, or to be made, in the canal service contemplate doubling the length of the locks, of which there are 73, and deepening the canal by adding a foot to the top and removing a foot at the bottom. The former of these changes is now underway; the latter is still only a matter of hope, though urged by the foremost engineering authorities and sanctioned by the state officers.

connecting lakes Superior and Huron; and the Illinois and Michigan ship-canal now constructing to connect Chicago with New Orleans and the Gulf.[1] (See p. 38.)

Commerce on the Great Lakes has been increased by the building of canals, and the removal of obstructions in the waterways connecting these inland seas. Lake Superior is twenty-two feet higher than Lake Huron, and in 1856 a lock canal was constructed between these two lakes to avoid the falls of the St. Mary's River. The St. Mary's Falls canal was originally twelve feet deep. In 1881 extensive improvements were made, and the depth increased to seventeen feet.

But the demands of increasing commerce are not yet satisfied, and a new canal of greater depth and capacity is now in course of construction by the government. More commerce in tonnage passes through this canal than through the Suez canal, — the number of vessels in the year 1894 being 14,491. Since the enlargement of the canal it is possible for vessels of moderate draught to make the continuous voyage from Lake Superior to the ocean, a distance of 2,000 miles, by way of the Great Lakes, the Canadian canals, and the St. Lawrence River.

Railways. — The United States is pre-eminent among nations, not only in its natural and artificial waterways, but also in its railways. The railway mileage of the United States is greater than that of Europe. Railways have been built for commercial rather than military ends. Many trunk lines were extended into new and unsettled regions, in which towns and cities sprang up with great rapidity; and new states were soon formed.

Of late years there has been a steady tendency in all kinds of business to drift to the large cities, and in all countries the large cities are growing at the expense of the small towns and villages. As it is in local industries, so it is in commerce. Ports that formerly carried on commerce with all parts of the globe have dwindled into insignificance by the rapidly increasing prosperity of others more favorably situated. Nantucket, Salem, Fairhaven, and Newport conducted most of the commerce of the country a century ago. Now the trade that they formerly held goes either to New York or to Boston, and the commerce of these once flourishing ports is limited to a few small schooners engaged in the coasting-trade.

QUESTIONS

What can you say of the commerce of the American colonies before the Revolutionary war? — of its subsequent growth? How did the American merchant marine compare with the British in 1860? What were the reasons for its decline? How should it again be built up?

What are the two great waterways for internal navigation in the United States? Name the principal navigable rivers of New England, —

[1] It is proposed to construct this canal in such a manner that it will provide Chicago with 30 additional miles of wharfage. The projected route is about 40 miles to Joliet, and thence 285 miles to the Mississippi. The depth will be 20 feet, thus furnishing a channel adequate for the deepest draught vessels that may in future navigate the Great Lakes. Increase of lake shipping must at once follow this improvement, and the importance of Chicago as a commercial depot be very greatly enhanced.

of the lower Atlantic coast, — of the Gulf states, — of the Pacific slope. What is the most important American canal? Name other important canals. What ship canal is proposed to connect the Great Lakes with the Gulf of Mexico? Describe the St. Mary's Falls canal.

What are the modern tendencies of industrial activities and of population? [*Ans.* — To concentrate in cities.] What are some of the results of this? Name some New England ports, once commercially important, but now relatively unimportant.

Growth of Industries and Commerce. — The growth of the United States during the past hundred years has been more remarkable than that of any nation in the world's history. At the time of the organization of the colonies under one government, the total population was less than four millions. From its foundation each colony had been independent of the others, and relied for manufactured goods on England. The New England colonies had turned their attention mostly to marine commerce and to fishing.[1]

The Middle Atlantic colonies had some commerce, but the industries were chiefly connected with grain and dairy farms, while in the Southern colonies tobacco, cotton, and sugar-growing were the main occupations. There was but little change in these conditions until after the second war with England in 1812, when the government gave great encouragement to manufactures. The New England people had acquired wealth by their commercial ventures, and now entered upon manufactures as energetically as they had pursued commerce. Nearly every mountain stream with sufficient flow of water to turn a water-wheel was called into requisition, until now scarcely a one horse-power of water-fall remains undeveloped; even large rivers were dammed to obtain power for the multitude of factories.[2] Thus Holyoke was built on the Connecticut River, Lowell and Manchester on the Merrimac, and Lewiston on the Androscoggin.

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[1] In 1789 the United States showed imports of $23,000,000, and exports of $20,000,000, which is less than the present monthly commerce of the port of New York alone. The tonnage entering the seaports of the United States for 1789–90 was 761,700; for 1893–94 it was 17,000,000.

The following is a comparison of the merchant marine of the United States on Dec. 31, 1789, and on June 30, 1894, in tons, divided according to employment: —

YEAR	FOREIGN	COASTWISE	FISHERIES
1789	124,000	69,000	9,000
1894	899,698	3,696,276	88,055

[2] "The industries, which the first act of our first administration sought to encourage, now give remunerative employment to more people than inhabited the republic at the beginning of Washington's presidency. The grand total of their annual output, of five thousand millions of dollars in value, places the United States first among the manufacturing countries of the earth. One-half the total mileage of all the railroads, and one-quarter of all the telegraph lines of the world within our borders, testify to the volume, variety, and value of an internal commerce that make these states, if need be, independent and self-supporting. These hundred years of development under favoring political conditions have brought the sum of our national wealth to a figure which has passed the results of a thousand years for the mother-land herself, otherwise the richest of modern empires. The impetuous progress of the North, and the recent marvellous industrial development of the South, have stimulated production until our annual surplus nearly equals that of England France, and Germany combined. The teeming millions of Asia till the patient soil, and work the shuttle and loom, as their fathers have done for ages; modern Europe has felt the influence and

The overcrowded population of Europe was tempted by the opportunities to make homes in the New World, and in 1820 over 8,000 of them immigrated. Those who had been employed in factories at home found employment in similar factories here; but the majority were tillers of the soil, and these new-comers pushed the lines of civilization westward in their search for homes. Between 1820 and 1890 over fifteen millions of people, representing nearly every nation on the earth, found homes in the United States.[1] With such a rapid growth of population, industries of all kinds multiplied, not only throughout the New England states, but in New York, New Jersey, and Pennsylvania, and these nine states now do nearly half the manufacturing of the country.

By the introduction of railways the farming communities of the West were brought into direct communication with the seacoast, and the product of the wheat-fields sought market in the great cities of Europe. The energy with which railway-building was conducted, opened new regions of rich farming-lands that soon became settled.[2] The discovery of coal and iron in Pennsylvania gave an impetus to manufacturing, which increased in even greater ratio than the demand for manufactured goods, until now these are being exported where a quarter of a century ago similar goods were almost entirely imported.

In a new country there are innumerable directions in which energy and enterprise can exert themselves. Agriculture pays the largest profit at first, owing to the cheapness of land; but after the natural fertility of the soil is gone, and artificial fertilization is necessary, the profits are less. Then come greater attention

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received the benefit of the incalculable multiplication of force by inventive genius since the Napoleonic wars. Yet only 269 years after the little band of pilgrims landed on Plymouth Rock, our people, numbering less than one-fifteenth of the inhabitants of the globe, do one-third of its mining, one-fourth of its manufacturing, one-fifth of its agriculture, and own one-sixth of its wealth." — [*From an Address by Chauncey M. Depew.*]

[1] During the year ending December 31, 1888, 518,518 immigrants arrived in the United States, as against 510,059 in 1887. Of these, 405,163, or nearly 80 per cent., entered at the port of New York. Of the total number arriving, 33 per cent. came from Great Britain. The immigrants from other countries were: Germany 106,924, France 6,869, Austria-Hungary 41,665, Russia 37,333, Poland 5,902, Sweden and Norway 65,949, Denmark 8,756, Holland 5,457, Italy 47,422, Switzerland 7,619, all other countries 12,305.

[2] During the year 1888 the government disposed of 16,319,076 acres of the public domain under the homestead, pre-emption, and forest land laws. This would make more than one million new farms of 160 acres each. In the eight years ending 1890 not less than 124,000,000 acres of the public domain, comprising an area of 193,880 square miles, were located for settlement, — a greater extent of territory than is covered by the states of Illinois, Indiana, Ohio, and Michigan. Of this area the Dakotas contributed 30,000,000 acres, Kansas 18,000,000 acres, and Nebraska more than 16,000,000 acres. In California, Oregon, Nevada, Washington, Idaho, Utah, and Arizona, 19,000,000 acres more must be added to the account. During the same period of eight years 13,000,000 acres have been opened to settlement in Arkansas, Louisiana, Mississippi, Alabama, and Florida. The vast area of railroad lands that has been sold and occupied by settlers during the same period is not included in these figures. It is estimated from the reports of the land managers of the land-grant railways that they have sold 18,000,000 acres since 1880. The result is a grand total of 142,000,000 acres, or 222,025 square miles, of the public domain disposed of for occupation and settlement between 1882 and 1890. It comprises an area greater than that of Germany or France, and twice as great as that of Great Britain and Ireland.

to small crops, and the beginnings of the manufacture of articles of every-day use. Grain-growing pushes outward where the newer lands are; and, as agriculture grows less profitable, manufacture follows slowly in its wake. In the longest settled states agriculture is limited mainly to vegetables that require careful attention. The quality of manufactured goods improves, however, as the skill of the operatives increases. Thus agricultural implements are made to greater advantage in the West than in the East; but watches, steam-engines, and carefully adjusted electrical and other appliances are most extensively manufactured in the East where the more skilled mechanics are. Coarse cotton cloth can be made cheaper in Augusta, Atlanta, and other centres near the cotton fields, than in New Bedford, Fall River, or Lowell; but in the finer grades of manufacture the skill of the operatives in Georgia is not yet equal to that of the operatives of Massachusetts.

The several sections of the United States are now assuming distinctive commercial characteristics. The northeastern states are the oldest and most thickly settled. Their chief commercial products are therefore the better grades of manufactured goods.

Industries Sectionally Considered. — The southeastern states are thinly inhabited, having large areas of farming-land only partly developed. Hence, these states produce mainly raw materials, and the rougher sort of manufactures, such as coarse cotton cloth, pig-iron, and lumber. In the central or Mississippi region food-products are cultivated in the states lying to the west, while in the eastern section more manufacturing is carried on. In general, the Pacific slope is still a great producer of raw materials, minerals, lumber, and food-products; but in the vicinity of San Francisco, the longest settled region, there are extensive manufactures.

The commercial spirit of the people in the northern states of the country has led to a more complete development of the resources of these states than has been attempted in the South. But since 1880 Northern capital has been turned southward, and the greatest industrial development in any part of the country during these years has been in the South, — chiefly in the development of coal and iron mines. It is estimated that nearly $175,000,000 of Northern money was invested in the South in 1888.[1] Though the iron interests of the South are of very recent development, yet the output of the Southern pig-iron mills in 1888 was greater than was the iron product of the whole country twenty-five years ago, and in 1892 it exceeded 1,500,000 tons. In ten years the mineral products of the South have increased over 700 per cent.

The demand for energy and capital within our own borders has been so great that there has been no necessity to seek outside markets. In this respect the contrast between the United States and many of the European countries has been very marked, as the heavy American investments of English, German, and French

[1] Nearly $30,000,000 of this was invested in Alabama, which leads in mining and manufacturing enterprises. Kentucky got $28,000,000; Texas $18,000,000; and Georgia $14,000,000. The least amount invested in one state was $2,000,000, which went to Mississippi.

syndicates show. Since 1860 our exports and imports have steadily increased. The expansion of trade, moreover, has taken place in nearly every direction, though the increase with South American and Asiatic nations has been relatively small.[1] There is every indication now, however, that our country is on the verge of great commercial advancement, and that manufactured products will take

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[1] In the winter of 1889 and '90 the assembly at Washington of an International American Congress composed of accredited delegates from all the republics of the western continent was an event that may bear results of the greatest commercial importance. This meeting recalls the fact that as early as 1825 efforts were made in the same general direction. Presidents Adams and Monroe gave all possible encouragement to such a congress, and one was accordingly held at Panama in 1826 ; but owing to the death of several delegates, and especially to political complications among the countries of South America, this congress was barren of practical outcome. It adjourned to meet later at the City of Mexico, but its sessions were never resumed.

In 1881, while Mr. Blaine was Secretary of State under President Garfield, he endeavored to arrange for a meeting of delegates from all the nations of the "three Americas ;" but upon his retirement from the cabinet, the project was temporarily abandoned.

The recent congress owed its existence to the act of May, 1888, and especially to the renewed impetus given to the whole matter by the return of Mr. Blaine to the Secretaryship of State during the administration of Mr. Harrison. Many mutually beneficial measures, subject to ratification by later treaties, were considered by it. A common coinage of silver (which is mainly an American product, and which it has long been the endeavor of European nations to demonetize), a generous system of ship subsidies, and the establishment of common tariff schedules, were among the important measures considered.

This congress directed special attention to the course of trade between the United States and the countries south of us. As a general statement, it may be said that we have bought of them more than they have bought of us. In other words, our exports to them have paid for only a part of our imports from them. The balance of payment has been made up of European merchandise, shipped to Mexico and Central and South America, which merchandise, in turn, has been paid for by exports from the United States to Europe. But these countries have taken manufactures freely from Europe, while we have sent to Europe agricultural products. We, therefore, in effect, have sent breadstuffs, cotton, and provisions to Europe to pay for some millions of dollars' worth of imports from South America. The question, therefore, arose whether the payment could not be made in full, by exports of manufactures to South America, instead of by exports of farm produce to Europe.

The results of this International Congress have been beneficial in our trade relations with the South Countries. A treaty of mutual trade concessions has been made between the United States and Brazil. This treaty is one of trade reciprocity. By its terms it may be said that the raw products of these, our Southern neighbors, are admitted into the United States either free of duty or at a reduced rate ; while the manufactures of our own country are admitted into Brazil on similar favorable conditions. A treaty did exist with Spain relating to our commerce with her former colonies of Cuba and Porto Rico. As Porto Rico is now an American colony, and Cuba is to form an independent government, the commerce of these islands will naturally turn mostly to the United States.

American goods cannot be sold in South America in competition with Europe, all other things being equal, without at least as much attention to the details of the business as Europeans are in the habit of giving. A subsidy is pecuniary assistance to facilitate commerce. Every commercial nation but our own assists its ocean steamers ; and experience has taught, that this is the surest way to establish lines of foreign trade. American steamships will never be fairly paid for transporting the mails until their compensation is reckoned by the length of the voyage, instead of by the number of letters carried.

a more important place among exports than they have in the past. Changes are occurring in the character of our exports, particularly in those of food-products. Russia, Roumania, Austria-Hungary, India, and other countries are exporting wheat in increasing quantities. They cannot compete with us closely enough to drive American wheat from the market, but they have reduced the profits of wheat-growing to a minimum. The Argentine Republic and other South American countries are competing as closely with us in meat and animal-products as are the countries just named in wheat. Russian petroleum now vies in some markets with the Pennsylvania product, and, owing to its abundance, gives promise of being a keen competitor.

Our Exports and Imports. — The United States stands fourth among nations in the value of its foreign commerce, Great Britain being first, Germany second, and France third. The value of the exports of the United States during the past ten years averaged about $760,000,000 a year; that of the imports for the same period, $650,000,000 a year.[1]

In the order of value the bulk of the *import* trade of the United States is carried on with Great Britain and her possessions, Germany, France, Spain and her colonies, Brazil, Japan, Italy, Mexico, China, Switzerland, The Netherlands, the Hawaiian Islands, Venezuela, Belgium, and Austria-Hungary.

In the order of value the bulk of the *export* trade of the United States is carried on with Great Britain, Germany, France, Belgium, The Netherlands, Spain, Italy, Russia, and Mexico.[2]

QUESTIONS

Give a general account of the growth of the United States and of the development of its natural resources. Mention an important early industry of New England. In what direction are New England's energies and wealth now turned? What can you say of immigration considered by nationality? Contrast the industries of the western part of our country with those of the eastern part. Why does agriculture predominate in the one, and manufacture in the

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[1] Many agricultural products are imported into the United States that should be grown at home. First among these stands sugar. The wheat and flour exported will scarcely pay for the sugar imported. Flax and hemp, which furnish the material for making the sacks used in transporting wool, cotton, and hops, should be more extensively grown, to displace foreign fibres that cost millions of dollars. Other fibres of sub-tropical regions should be produced along the Gulf coast. The imported fibres, with their manufactures, amount to more than two-thirds the value of our cotton exports. There is an importation of fruits to the value of about $20,000,000, half of which, at least, might be produced in this country.

[2] In 1894 the export trade of the United States was classified as follows: —

Agricultural products	$595,793,000
Manufactures	144,078,000
Products of the forest	31,950,000
Minerals and mineral oils	55,844,000
Products of the fisheries	3,492,000
Miscellaneous	38,039,000
	$869,196,000

Eighty-five per cent. of the exports were agricultural products and manufactures.

other? What section of our country has, in very recent years, made great advances in the direction of manufactures? To the development of what two raw products are these advances mainly due? What can you say of the growth of our foreign trade? What of our trade with the countries of South America and Asia?

What is the relative position of the United States among the countries of the world in respect to the value of its foreign commerce? Name the first four commercial countries of the world in the order of their importance. About what is the value of our annual exports? — of our imports? Name, in the order of value, the eight countries from which our imports are mainly derived. Name those to which our exports are mainly sent. What class of products constitutes five-sevenths of our exports?

IV. — SIX PRINCIPAL SEAPORTS

New York City is the great commercial centre of the United States, and ranks among the half-dozen leading cities of the world, both in population and in wealth and enterprise. Its geographical position and its fine harbor combine to make it the commercial metropolis of the Western Continent. In amount of commerce, it is surpassed only by London and Liverpool. Manhattan Island, on which it is mainly situated, is long and narrow, and projects into a deep bay. This bay and the adjoining waters furnish nearly one hundred square miles of anchorage ground; while the shores of the island have twenty-five miles of water-front, all of which furnishes good wharfage area. The adjacent shores supply as much more.

The building of the Erie canal and its branches brought New York into direct and cheap communication with the great producing country of the lake regions; and, with the rapid development of agricultural interests in those regions, the commerce of the city increased. The subsequent introduction of railways supplemented the canal system, and poured a still greater amount of food-products into the city to be exported. Thus, New York gradually and steadily absorbed the bulk of our foreign commerce, both of exports and imports. Direct communication is now held with all the large commercial centres of the world by steamships and by sailing-vessels. New York City alone has more than half of the foreign commerce of the country. Four trunk lines of railway connect the city with the great producing regions and commercial centres of the West.

These lines are the New York Central, the New York, Lake Erie, and Western, the Pennsylvania, and the Baltimore and Ohio. They bring the food and other products of the West to New York for export, and, in return, distribute throughout the West the manufactures of the Atlantic states, and the wares imported. Even the cotton of the South seeks New York; and a fifth of the amount exported annually passes through this port.

New York is the centre from which most of the great financial transactions of the country emanate, and as a money-market it is second to London only. The manufacturing interests in and around the city are much greater than in any other part of the country. The more important industries are: the making of clothing, shoes, cigarettes and cigars; sugar-refining, printing and book-binding, brewing,

leather-working, and iron- and steel-working. Some of the best ships built in the country are launched here.

Opposite, but commercially a part of New York, on the western end of Long Island, is *Brooklyn*. The two cities are connected by the finest suspension bridge in the world. The manufacturing interests of Brooklyn are very great, but it is also a city of homes for New York business men. It has a great extent of wharfage, and a considerable portion of the commerce of the port of New York is done through Brooklyn.

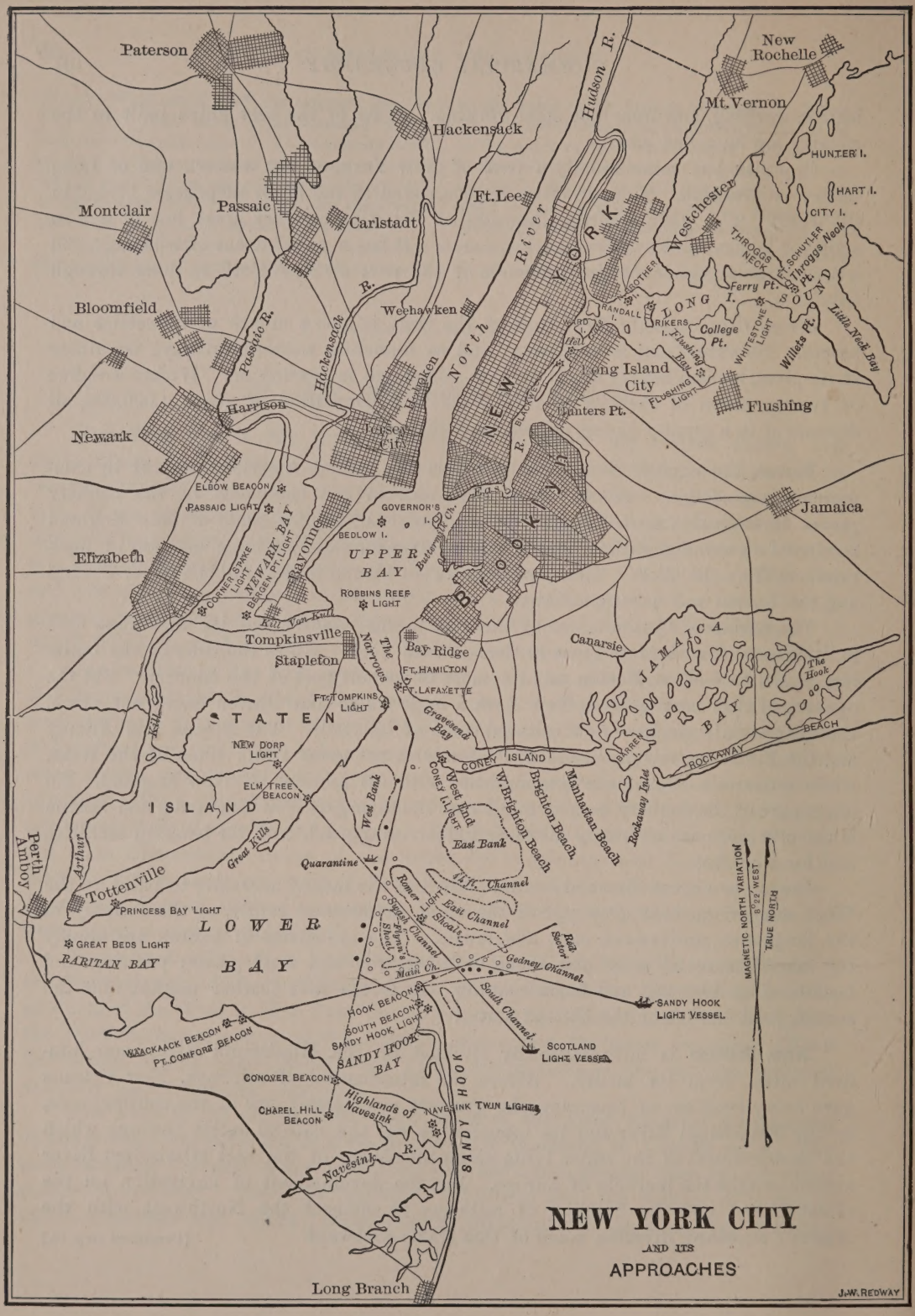
Jersey City, opposite New York on the west, is also a suburb of industries and homes. Its water-front is extensive; and as numerous western railways terminate at its piers, a considerable direct foreign commerce is carried on. Within a radius of twenty miles of the city of New York is a population of about 4,000,000, all dependent to a greater or less degree upon the city.

Boston, the capital of Massachusetts, is the second American seaport in commercial importance. About nine per cent. of the commerce of the country passes through this port. Much of the export and import trade of New England is carried on through Boston, and it also receives for export a large amount of food-products from the West. These products reach Boston largely *viâ* the N. Y. Central and the Boston and Albany railways.

The harbor of Boston is one of the best in the country, but its anchorage area is little more than half as great as that of New York. Up to the time of the building of the Erie canal, Boston was the most important port of the country. But the opening of that canal gave to New York a large traffic that Boston could not reach, though the railways have now restored some of its trade. The Boston and Albany and the Fitchburg railways connect Boston with the great trunk lines of the West, while numerous other lines communicate with all sections of New England. No other part of the country does as much manufacturing as New England; and Boston is the city upon which nearly all these industries depend, both for banking facilities and for a market.

Boston is a great financial centre. Much of the money necessary to build up the West came from that city. It is the chief educational centre of the country in the languages, professions, arts, and music. The industries of Boston are chiefly the manufacture of boots and shoes, clothing, iron and steel goods; printing and book-binding, brewing, and sugar-refining. It is the first leather market and the second wool market of the United States.

New Orleans is advantageously situated on the Mississippi River, one hundred miles from its mouth. Before the introduction of railways, New Orleans gave every evidence of becoming the greatest commercial city of the continent, as, by the Mississippi River and its branches, it was the natural outlet through which the food-products of the states lying along the shores of the vast Mississippi River system sought the markets of Europe. But the development of navigation on the Great Lakes, and the building of railways to connect the Northwest with the Atlantic seaboard, diverted much of this traffic eastward. [Continued on p. 70.]


Paterson
Hackensack
Hudson R.
New Rochelle
Mt. Vernon
HUNTER I.
HART I.
CITY I.
Montclair
Passaic
Carlstadt
Ft. Lee
Westchester
THROGGS NECK
SCHUYLER
Throggs Neck
Ferry Pt.
LONG I.
SOUND
Bloomfield
Weehawken
Passaic R.
Hackensack R.
North River
NEW YORK
BOTHER
RANDALL I.
3RD I.
RIKERS I.
College Pt.
WHITESTONE LIGHT
Willets Pt.
Little Neck Bay
Flushing Bay
FLUSHING LIGHT
Long Island City
Hunters Pt.
Flushing
Harrison
Newark
Jersey City
Hoboken
ELBOW BEACON
PASSAIC LIGHT
NEWARK BAY
BERGEN PT. LIGHT
CORNER STAKE LIGHT
BAYONNE
GOVERNOR'S I.
BEDLOW I.
Battery Ch.
UPPER BAY
BROOKLYN
R. BLACKWELL'S I.
Jamaica
Elizabeth
ROBBINS REEF LIGHT
Kill Van Kull
Tompkinsville
Narrows
The
Bay Ridge
Canarsie
Staplefon
FT. HAMILTON
FT. LAFAYETTE
JAMAICA BAY
The Hook
FT. TOMPKINS LIGHT
STATEN
Grassend Bay
BEACH
NEW DORP LIGHT
CONEY ISLAND
BARREN
ROCKAWAY
Rockaway Inlet
ELM TREE BEACON
ISLAND
West Bank
Coney I. Light
W. Brighton Beach
Brighton Beach
Manhattan Beach
Perth Amboy
Arthur
Great Kills
East Bank
Quarantine
41 ft. Channel
Tottenville
Romer Shoal Light
East Channel
PRINCESS BAY LIGHT
Swash Channel
Shoals
LOWER
GREAT BEDS LIGHT
RARITAN BAY
BAY
Main Ch.
Red Sector
Gedney Channel
SANDY HOOK LIGHT VESSEL
HOOK BEACON
SOUTH BEACON
SANDY HOOK LIGHT
South Channel
WEACKAACK BEACON
PT. COMFORT BEACON
SANDY HOOK BAY
SCOTLAND LIGHT VESSEL
CONOVER BEACON
CHAPEL HILL BEACON
Highlands of Navesink
NAVESINK TWIN LIGHTS
SANDY HOOK
Navesink R.
Navesink
MAGNETIC NORTH VARIATION 8° 22' WEST
TRUE NORTH
NEW YORK CITY
AND ITS
APPROACHES
Long Branch
J.W. REDWAY

APPROACHES TO NEW YORK

LIGHTHOUSES AND BEACONS

NAME	CHARACTER	REMARKS
Navesink, L. H.	F. W.	Twin Lights.
Coney Island, L. H.	Fl. R.	Interval of flash, 10 sec.
Hook, Beacon	F. W. with Red Sector.	Fog Siren; red sector covers Gedney Ch.
Sandy Hook, L. H.	F. W.	
South, B.	Range Lights.	Range for short tack of Main Ch.
Conover, B.	F. W.	
Chapel Hill, B.	Range Lights.	Range for Main Ch.
Pt. Comfort, B.	F. W.	
Waackaack, B.	Range Lights.	Range for East Main Ch.
Elm Tree, B.	F. W.	
New Dorp, B.	Range Lights.	Range for Swash Ch.
Princess Bay, L. H.	Fl. W.	Interval of flash, 5 sec.
Fort Tompkins, L. H.	Fl. R. and W.	" " " 10 "
Robbins Reef, L. H.	Fl. W.	Fog-bell; flash, 6 sec.
Bergen Point, L. H.	F. W.	Newark Bay and K. von Kull fog-bell.
Corner Stake, B.	F. R.	Newark Bay and Arthur Kill.
Passaic, L. H.	F. W.	Newark Bay; fog-bell.
Elbow, B.	F. R.	" " " "
Throgg's Neck, L. H.	F. W.	L. I. Sound and East R.; fog-bell.
Blackwell's Island, L. H.	F. R.	East R.
N. Brother Island, L. H.	F. W.	L. I. Sound; fog-bell.
Gt. Beds, L. H.	F. R.	Raritan Bay and Arthur Kill.
Hellgate, Stake-light	F. W.	East R.; fog-bell.
Romer Shoals, L. H.	F. R.	
Bartholdi Statue	F. W.	Statue of Liberty.
Sunken Meadow	F. R.	Near Randall's Island.
Flood Rock (2)	F. R.	East R., Hellgate.
Man-of-War Rock	F. R.	
Governor's Island, Stake-light (2)	F. R.	Lights on Castle William.
Riker's Island, Stake-light	F. R.	N. end of Island.
Whitestone Point	F. W.	
Flushing Bay	F. R.	

Abbreviations and Marks.

F. W., fixed white; F. R., fixed red; Fl. W., flashing white; Fl. R., flashing red; L. H., lighthouse; B., Beacon; ○, red buoy; ●, black buoy; ✳, lighthouse.

But one trunk line of railway, the New York Central and Hudson River, enters New York City directly. The termini of the others are at Jersey City or Hoboken, the connection being made by ferries. Several local roads, however, enter the city from the north. A railway tunnel under the Hudson River from the New Jersey shore is now two-thirds completed, and there can be no doubt that in the course of the next decade the Hudson will be spanned opposite New York City by a great railway bridge. By these means, passengers and goods will find direct admission to the metropolis from the West and South, and the economic importance of these great works of engineering can hardly be estimated.

There are two approaches by water to New York City, one by Long Island Sound through East River, the other by New York Bay, upper and lower, and North River. The former is used only by passenger steamboats and small vessels engaged in commerce along the Sound and the New England coast.

The whole extent of the Sound is marked by lights. Throgg's Neck Light is at the entrance to East River. There are no range lights proper; but from Whitestone Light the light on North Brother and the stake-light on Riker Island are approximately in range — the channel being marked by buoys. After passing these lights, a red stake-light marks the entrance to Hellgate, and two lights, a revolving red on the west, and a fixed white on the east, indicate the limits of the channel. Only one of the latter is shown on the map. Inside of Hellgate, the course is west of Blackwell's Island and west of the light opposite Hunter's Point.

The approach to the City by way of the lower bay is more difficult. A vessel approaching from Sandy Hook light-ship is guided by the buoy lights, red on the north and white on the south, that mark the limits of Gedney Channel. There are no range-lights. *The red sector of Hook Beacon covers the narrow part of this channel.*

When Waackaack and Point Comfort beacons are in range, the vessel is opposite the main channel. The course is thence W.S.W. by W. with these lights in range, until South Beacon and Sandy Hook Light are in range. Leaving the latter in range astern, the course then lies N.W. by three points West until Conover and Chapel Hill beacons are in range. With these lights in range astern, the course is N., one point E. midway between Fort Tompkins Light (red and white flashing) and Coney Island light (red flashing), and thence through the narrows in line with Robbins Reef Light (white flashing). Vessels drawing not more than fifteen feet of water may enter by Scotland Light ship, passing through Swash Channel. New Dorp and Elm Tree beacons are range-lights for this channel, which is followed until Conover and Chapel Hill beacons are in range astern. The foregoing applies to night navigation only; buoys and channel markers in abundance direct the steersman or pilot in the daytime. Deep-sea vessels rarely enter the harbor at night.

Several kinds of buoys are used. Spar-buoys are pieces of spar anchored in shallow water. Usually they are temporary channel-markers, black or red, according to position. Bell-buoys are surmounted by a frame holding a bell; the latter is sounded by the action of the waves. Whistling buoys are provided with a whistle sounded by air compressed by the action of the waves. Bell and whistling buoys are cautionary, but not danger signals. Light-buoys are surmounted each by a red or a white light. The buoy contains a tank of compressed gas. Buoys are colored to indicate the position of the channel. On entering a channel at the outer or seaward entrance, red buoys mark the *starboard* or right, black buoys the *port* or left side of the channel. A buoy with black and white vertical stripes is a channel-marker; with black and red horizontal stripes, it is a danger signal.

The channel at the mouth of the Mississippi River, difficult to navigate, and frequently changing by the deposit of silt from the river, was another hinderance to the development of New Orleans. This has been recently deepened to thirty feet by means of jetties, so that ocean vessels of greatest draught may now reach the city. These improvements have greatly increased the commercial importance of the port. About a third of the cotton crop and nearly all of the cotton-seed oil are shipped from New Orleans. An important commerce is being developed between New Orleans and Mexico and Central America. By the completion of the Nicaragua interoceanic canal, the commerce of the port will be greatly increased. The railway connections of the city have been improved during recent years, and have done much to aid its commercial development.

The exports of New Orleans are ten times the value of its imports. Most of the sugar-cane raised in the United States is grown in Louisiana, and the raw sugar is sent to market through the port of New Orleans. Rice, another leading crop, finds its way to market by the same means.

The situation of the city is such that its commercial interests are naturally more important than its manufactures; but in recent years the latter have assumed great and increasing consequence. It is estimated that there are now in New Orleans 2,000 factories of various kinds, the leading products of which are, tinware, clothing, boots and shoes, manufactures of wood, and railway cars. During the decade ending 1888 the number of manufacturing establishments increased threefold.

San Francisco is the fourth seaport in commercial importance in the United States, and is destined to become a great commercial centre. San Francisco and San Pablo bays on which it is situated, one of the most beautiful harbors in the world, furnish anchorage ground several times as large as that of New York harbor. The harbor itself and the Golden Gate (the strait connecting it with the ocean) admit vessels of the greatest draught at any time, regardless of tides. Nearly all the foreign commerce of the Pacific slope passes through San Francisco. Much of the trade is import; but of late years, wheat and fruit have become considerable exports. In the amount of wheat exported, San Francisco ranks next to New York, and in 1888 it was third in the amount of flour exported, Boston being second. Fruits, lumber, wine, and meat products are other exports. Nearly all the quicksilver exported goes through this port. Lines of steamships connect the city with New York, the Pacific coast ports of South America, Yokohama, Honolulu, Auckland, and the various Australian ports. San Francisco is the great distributing centre of the coast, and all parts of the Pacific slope pay tribute to it to a greater or less degree. It is connected by steamship lines with all the important coast towns, and by rail with the more important places of the interior. The building of trans-continental railways has greatly increased travel and trade between the Atlantic and Pacific seaboards. Much of the coal used in California is imported from Washington, British Columbia, and Australia. But in spite of the high cost of fuel, manufactures are extensive, especially those of furniture, leather goods, clothing, cigars, iron and steel, and refined sugar. Considerable fishing is carried

on from this port, and, with New Bedford and Provincetown, Mass., it does most of the whaling of the world.

The completion of the Nicaragua canal will be a great stimulus to the commerce of San Francisco: closer communication with New Orleans and New York being a necessary result of the construction of that work.

Philadelphia is fifth among the seaports of the country. The city is situated on the Delaware River, one hundred miles from the Atlantic Ocean. The depth of the river at low tide is sufficient to admit large ocean steamships. In the early part of the century, Philadelphia, with Boston, possessed most of the ocean commerce of the country; but since the introduction of railways, and the development of the resources of the West, other ports have grown into importance at the expense of both, but particularly of Philadelphia. The principal exports are, food-products, coal, cotton, leather, tobacco, and petroleum. The petroleum export of the United States is almost entirely from Philadelphia and New York.

The proximity of coal and iron mines largely accounts for the great industrial development of Philadelphia and its vicinity, where manufacturing interests greatly exceed shipping interests in value. Iron- and steel-working is very extensively followed, but it is for its woollen industries that the city is especially noted. It is the greatest carpet-manufacturing centre in the world; and in making velvet, Brussels, and other fine grades of carpets, the city is not excelled. Woollen cloth, worsted, yarn, and other wool materials are also extensively manufactured. The manufacture of pressed and ornamental bricks and terra-cotta ware is a great industry, and one for which Philadelphia is famous. Among other leading manufactures are those of drugs and chemicals, sugar, hats, and cotton goods.

Philadelphia has a population of over a million. The city is well provided with railway facilities, and its prosperity has been largely due to a system of canals which connect it with the coal and iron regions, and with New York and Baltimore. In the vicinity of Philadelphia, along the shores of the Delaware River, are the largest and most important ship-building yards in the United States. Among the vessels built in these yards are the swift steamships plying between San Francisco and Australia. The vessels for the new navy of the United States constructed here have few if any superiors in the navies of other nations.

Baltimore has a commerce slightly smaller than that of Philadelphia. Its exports are a third greater than those of the latter city. In exports Baltimore ranks fourth, New York being first, New Orleans second, and Boston third. Its imports are but a fraction of the exports, and little greater in value than those of New Orleans. The city is situated near the head of Chesapeake Bay, one hundred and eighty miles from the Atlantic. It owes much of its growth, however, to railway connections with the West rather than to its maritime position. The harbor is naturally a fine one, but it has not the depth and capacity found at other leading ports.

Baltimore is the greatest oyster-market in the world; and one of the most

important industries of the city is that of gathering, canning, and shipping oysters to all parts of the world. The city is also a considerable tobacco-market. Among the leading industries are iron- and steel-working, and brick-making.

These six ports, New York, Boston, New Orleans, San Francisco, Philadelphia, and Baltimore, do about eighty-nine per cent. of our importing and seventy-nine per cent. of our exporting; that is, eighty-four per cent. of our total foreign commerce. The remaining sixteen per cent. is divided among a large number of minor ports. Some of these latter are of considerable local importance, and well known in particular kinds of trade or manufacture.

QUESTIONS

Give a general account of the situation, size, and commercial importance of New York City. What causes have made it the metropolis of America? What great trunk lines of railway connect it with the West? What are its most important industries? What cities situated on the harbor of New York form with the metropolis the "Port" of New York? [*Ans.* — Brooklyn and Jersey City.] What is the combined population of the three cities? [*Ans.* — Nearly three millions.]

Locate and describe the chief city of New England. What can you say of the commerce of Boston? What trunk lines of railway have Boston for their eastern terminus? What can you say of the importance of Boston in banking, trade, and education? What are the principal local industries?

What natural advantages for commerce has New Orleans? How have these been improved? With what countries is New Orleans building up trade? What would be the effect of the Nicaragua canal upon the commerce of the city? How do the exports of New Orleans compare with its imports? What are the principal local manufactures? Name the leading items of export.

Describe the situation of San Francisco. What are its chief exports? What are the sources of the coal supply of California? What are the leading manufactures of San Francisco?

Locate and describe Philadelphia. What are its chief exports? What has caused the extraordinary development of its manufactures? Name the principal items of these. What can you say of its ship-building? What is the commercial rank of Baltimore as compared with other leading seaports? Describe the oyster industry of Baltimore. What are the leading local industries? What proportion of our export and import trade is carried on by the six great cities considered in this chapter?

V. — MINOR COAST CITIES

In Maine: — *Eastport*, the easternmost town of the United States, carries on a small traffic with the province of New Brunswick. Considerable fishing is done, and the seat of the sardine catching and canning of the United States is in this and other towns near by. The towns on the Penobscot and Kennebec rivers are devoted chiefly to ice-cutting in winter, and logging and wood-working in summer. *Bath*, at the mouth of the Kennebec, is the seat of considerable ship-building, especially that of wooden vessels of small tonnage. *Portland* sends out a fine fleet of cod- and mackerel-fishing vessels. A limited traffic, chiefly in the products of the wood-working shops, is carried on with the countries of South America. During the winter, owing to the closing of the St. Lawrence by ice, much of the commerce of Canada is carried on through Portland, as this port is in direct railway communication with Montreal and Quebec.

In Massachusetts: — *Gloucester* is the chief fishing-port of the United States. It has a great fleet of vessels engaged in the cod, mackerel, halibut, and other sea-fisheries. *Provincetown*

and other towns on Cape Cod are also engaged extensively in the fisheries. Next to New Bedford, Provincetown is the greatest sperm-whaling port in the world. Many of the best ship-masters of the merchant marine of the United States were born and bred on Cape Cod. For the past fifty years *New Bedford* has done half the world's whaling, and most of the world's supply of whalebone, whale oil, and sperm oil comes from this port. A number of the finest ships in the merchant service of the United States hail from this harbor. Since the decline of whaling, which is chiefly owing to the production of petroleum, cotton manufacture has been extensively entered upon, and New Bedford now ranks third among the cotton manufacturing cities of the country. In this city are the Wamsutta Mills, one of the largest cotton-manufacturing establishments in the world. *Fall River* carries on a coast-trade in cotton, coal, and other merchandise, as well as an important passenger traffic between New York and Boston. But it is chiefly known as the greatest cotton-manufacturing centre of the United States. A few miles above Fall River is *Taunton*, where are great iron- and steel-working establishments. Taunton is also engaged in coasting-trade. Some of the largest schooners on the coast hail from this port.

In Rhode Island: — *Providence*, at the head of Narragansett Bay, is the second city of New England. It is the seat of extensive jewelry manufacture, and is an important cotton and wool market, being in the heart of the great textile manufacturing region. Providence has a considerable coast-trade.

In Connecticut: — *Stonington* has some traffic between New York and the manufacturing centres of southern New England. *New London* possesses a commerce similar to that of Stonington. This port is also engaged to a limited extent in whaling and sealing. By way of *New Haven* there is steamboat traffic between New York and the manufacturing towns in the Connecticut River valley.

In Virginia: — *Norfolk* exports cotton, coal, breadstuffs, and lumber, and is an important tobacco market. *Newport News* has a trade similar to that of Norfolk, and ships a large amount of tobacco, being exceeded in this export only by New York and Baltimore.

In North Carolina: — *Wilmington* is the only port whose waters are deep enough to admit large vessels. It exports naval stores, cotton, and lumber, and ranks next to Savannah in the exportation of turpentine.

In South Carolina: — *Charleston* harbor has been much improved, and the port is gaining in commercial importance. The chief exports are cotton, both the common and the Sea Island; phosphate rock, naval stores, turpentine, and lumber. *Beaufort* is an important phosphate market.

In Georgia: — In the amount of the cotton it exports, *Savannah* stands next to New York among the ports of the Atlantic coast. In the shipment of turpentine it stands first. Other leading exports are rosin and lumber. *Brunswick* is the most important lumber port on the south Atlantic coast.

In Florida: — *Fernandina*, on the Atlantic coast, is a lumber market of some importance. *Key West* has sponge fisheries and cigar factories. *Appalachicola*, on the Gulf coast, at the mouth of the river of the same name, is also a lumber market. *Pensacola* is the chief lumber port on the Gulf coast, having sent out in 1888 more unwrought lumber than any other port in the country.

In Alabama: — *Mobile*, the only seaport in the state, has some traffic in lumber and cotton.

In Mississippi: — Most of the products of this state are exported through New Orleans, but some lumber is shipped from *Bay St. Louis*, the outlet of the Pearl River region.

In Texas: — *Galveston* is the leading port of the state, and of the Gulf ports is next to New Orleans in commercial importance. It stands second in cotton shipping for export, as New Orleans is first and New York second. Other exports are oil cake and meal, animals and animal-products. *Saluria* and *Corpus Cristi* carry on some trade in animals, animal-products, and lumber.

On the Pacific Coast: — *Seattle* and *Tacoma*, on Puget Sound, Washington, export lumber extensively to South America and elsewhere. Some wheat is also shipped. The Puget Sound cities are growing rapidly, and their commercial importance is yearly increasing. Wheat, lumber,

and wool are the principal exports of *Portland*, Oregon, and also of *San Diego*, southern California. San Diego sends out also some animals and animal-products. *San Pedro* is an important lumber market, nearly all the lumber used in southern California being shipped to this port.

QUESTIONS

Name the coast cities of Maine, and give some account of the industries and trade of each, — of Massachusetts, — of Rhode Island, — of Connecticut, — of Virginia, — of North Carolina, — of South Carolina, — of Georgia, — of Florida, — of Alabama, — of Mississippi, — of Texas, — of the Pacific states. From what cities are forest products exported?

VI. — NINE LAKE PORTS

Commerce on the Great Lakes has always found very active competition from the railways, owing to the fact that the lake system is closed to navigation from December to May, while the railways have no such interruption. Within the past few years, steamers of great speed and carrying capacity have been built for lake navigation, and now do much of the carrying of certain products. Owing to the many obstacles to navigation, the draught of these vessels is limited to sixteen feet. They average fourteen round trips each season between Buffalo and Duluth. The cargoes consist mainly of coal and manufactured goods going west, and of iron and copper ore, grain and lumber returning east. Chicago and Cleveland are important centres from which a very large percentage of the shipping is directed. Coal is sent from Buffalo and Erie to Chicago, Milwaukee, Duluth, Superior, and Toledo. Ore is shipped from Superior and Marquette to Cleveland and Chicago, grain and flour from Chicago and Duluth to Buffalo, and lumber from Michigan to Cleveland and Buffalo. Since 1885 navigation on the lakes has more than doubled in volume. The commerce of the lakes, though employing four-fifths as many vessels, is only one-fifth as great as that of the maritime ports of the United States.[1]

Oswego, the most important city of the United States on Lake Ontario, carries on a considerable trade with Canada. The largest starch-factory in the world is situated here.

Buffalo, at the foot of Lake Erie, is an important railway centre. Coal and the manufactured products of the East are shipped from this port to the West and into Canada. Grain, sent through the lakes toward the seaboard, is trans-shipped here to the boats of the Erie canal and to the trunk railway lines. Buffalo is an important industrial centre, particularly in metal- and wood-working, and in the manufacture of glucose.

[1] The aggregate value of American vessels engaged in the lake service is over $43,500,000. Of this amount Cleveland owns a little more than $10,000,000. There were many vessels launched in the season of 1889, and a large number of vessels without ratings engaged in lumber transportation, so that the aggregate American shipping upon the Great Lakes falls little short of $50,000,000 in value. Of the 1,878 vessels rated with a total of 675,000 tons, 572 are schooners, 548 propellers, 418 tugs, and 301 barges. The tonnage of the steam-vessels is one-half of the total.

Cleveland, situated on the southern shore of Lake Erie, has a valuable shipping-trade in grain, iron ore, and manufactured products. Its manufactures are very important, and include iron and steel wares, furniture, and farming implements. There are also a number of large petroleum refineries. The Ohio canal affords an outlet to the Ohio River, and thence to the Mississippi; and trunk lines of railway connect the city with the business centres of the East and the West.

Toledo, at the western extremity of Lake Erie, is a great railway centre. It has water communication with the Ohio River by the Miami canal, and is also connected with the Wabash canal. The city is an important grain-market. The manufacture of furniture and farm machinery is extensively carried on.

Detroit, on the Detroit River, between lakes Huron and Erie, is the most important port between Buffalo and Chicago. More tonnage is said to pass Detroit, than any other point in the world.

Bay City and vicinity is the centre of a vast lumber trade. Some of the richest salt deposits in the country are near this city.

Chicago, situated at the southern extremity of Lake Michigan, is the most important city on the Great Lakes and the second in population on the American continent. The harbor, naturally poor, has been greatly improved by artificial basins and sea-walls, so that now a greater number of vessels clear yearly from this port than from New York and Philadelphia together. There are open waterways to the Great Lakes, to all points on the Mississippi River, to New York (by way of the Erie canal), and, by way of the St. Lawrence River, to European ports. Chicago is the greatest railway centre in the world. About thirty lines, aggregating 66,000 miles of track, make this city their chief terminus. It is the greatest food centre in the world, and a large proportion of the products of the states west of this point find their way to market through this city. As much grain is yearly handled at Chicago as at St. Louis, Minneapolis, Milwaukee, Peoria, Duluth, Toledo, and Detroit, together. The meat-packing and meat-dressing establishments are the largest in the world, and more steel rails are made here than in Pittsburg and Allegheny City together. The manufacture of clothing, furniture, and leather goods, are important industries; and in the printing and publishing of books, this city is second to New York only. Chicago is the financial centre of the Northwestern States.

Milwaukee is eighty-five miles north of Chicago. The railway facilities of the city are excellent. The greatest industries are iron- and steel-working, and the brewing of malt liquors. Some grain is handled, and a small lake traffic is carried on. The cream-colored bricks made in the vicinity of the city are a leading export.

Duluth, at the western extremity of Lake Superior, is a rapidly growing city. It is at the head of navigation of the Great Lakes, and is the eastern terminus of the Northern Pacific Railway. The chief export is the grain harvested from the vast fields of northern Minnesota, the Dakotas, and Manitoba.

QUESTIONS

Give a general account of the commerce upon the Great Lakes. What are the principal items of merchandise in this trade? How does this trade compare in value with our coast-trade?

Name and characterize the trade and industries of each of the nine cities described, — Oswego, — Buffalo, — Cleveland, — Toledo, — Detroit, — Bay City, — Chicago, — Milwaukee, — Duluth.

VII. — TEN RIVER PORTS

Owing to the facilities of transportation furnished by the river, and to the railway connections with the other great centres of trade, numerous large cities have grown up along the Mississippi River and its tributaries.

Vicksburg, on the lower Mississippi, is the centre for the output of many cotton-seed oil-mills.

Memphis is one of the most important cotton-markets of the interior. It has many factories, and is a great distributing-point for the manufactured goods of the North Atlantic states.

St. Louis, on the Mississippi River, just below the junction of the Missouri, is the great commercial centre of the Mississippi valley. The population of the city is nearly half a million. From its situation St. Louis commands an enormous traffic both by water and by rail. It is a great market for grain, flour, animals and animal-products, tobacco, cotton, cotton-seed oil, and sugar. St. Louis has numerous local industries, the more important being metal- and glass-working, beer-brewing, flouring, and brick-making. The wholesale grocery business is more important than in almost any other interior city.

St. Paul is situated at the head of navigation on the Mississippi River, and is an important railway centre. This city has a great flour-milling business and miscellaneous trade. During the decade ending 1890 its growth was extraordinary, the population increasing from 41,000 to 133,000, and in 1895 reached 170,000.

Minneapolis, adjoining St. Paul on the west, is the greatest flour-producing centre in the world, the mills having a capacity of about 40,000 barrels a day. Wood-working is also an important industry in both Minneapolis and St. Paul, particularly that of cooperage in connection with the flour-making. Minneapolis has likewise had a phenomenal growth. In 1880 it had a population of 47,000; in 1890, 165,000; and in January, 1895, it was estimated at 210,000.

Kansas City, Missouri, is on the Missouri River. It has a small river-traffic, and its development is mainly due to its great railway facilities. In the importance of its railway connections, it ranks next to Chicago among western cities. The growth of this city has been very remarkable. It had no such natural advantages as the neighboring cities of Topeka and St. Joseph, but had, on the contrary, a great

many disadvantages such as usually prevent the growth of cities. Yet in spite of these obstacles, Kansas City has become one of the leading business centres of the country. Owing to its nearness to the cattle ranges, there is an enormous traffic in dressed beef, and in meat-packing it ranks next to Chicago. There is a constantly growing trade with Mexico. Kansas City, Kansas, adjoins the Missouri city of the same name, and with it forms one business centre.

Omaha has a considerable river traffic, and is a railway centre of much importance. In the city are large manufactures of railway supplies. Smelting and metal-working are a leading industry.

Louisville, on the Ohio River, is the greatest tobacco-market in the world. By reason of its extensive railway connections, it is active in the exchange of the food-products of the North for the raw materials of the South. Pork-packing, and the manufacture of whiskey and metal goods, are leading industries.

Cincinnati is the largest and most important city in the Ohio valley. An extensive traffic is carried on by the river; by the Miami canal, which gives water connection with Lake Erie; and by the great trunk lines which connect the city with all the leading commercial points. Pork-packing was formerly the chief industry of the city, and is still active, though not to the degree that it is farther west. Other industries of great value have sprung up. Iron and steel goods, beer, clothing, boots and shoes, printing, tobacco-manufacturing, and wood-carving, are the most important.

Pittsburg and **Allegheny City** are situated on the Alleghany and Monongahela rivers where they unite to form the Ohio. The first growth of Pittsburg was due to its favorable position for traffic by water; but the later development of the coal and iron mines of Pennsylvania has made the city, next to Chicago, the principal iron- and steel-producing centre of the country. The natural waterway at hand has been of inestimable value in the development of the city. Coal is loaded in barges at the mines up the rivers, and towed to the various cities along the Ohio and Mississippi. Glass-making is the second industry, and in this product Pittsburg stands first in the country.

A recent discovery which has greatly benefited Pittsburg and other manufacturing towns in Pennsylvania, Ohio, and Indiana, is that of natural gas, and the means by which it can be used as fuel. Natural gas has so superseded the use of coal in Pittsburg that much of the smokiness for which the city was once noted has disappeared.[1]

Crude petroleum is another fuel that, owing to its cheapness, has come into extensive use in several kinds of manufacture, particularly in metal- and glass-working. Great petroleum fields have recently been developed in Ohio. The products of these new fields possess only a small degree of illuminating, but the usual amount of heat-giving, quality.

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[1] This gas is found by sinking wells from six hundred to two thousand feet. It has been extensively used as fuel in factories, and for lighting and heating purposes in houses. It is the cheapest fuel used. New fields are continually opened. Unfortunately, evidences of diminishing supply lead to the belief that it will soon be exhausted.

The mains from the gas-fields, composing the high-pressure system of one company alone, have been able to deliver into the cities of Pittsburg and Allegheny nearly 200,000,000 cubic feet of gas every twenty-four hours.

QUESTIONS

Where is Vicksburg? What manufactured product of cotton is extensively shipped from this point? Locate Memphis. What can you say of its trade? What great city near the confluence of the Mississippi and Missouri Rivers? Name and characterize the local industries and the principal items of trade of St. Louis. Where is St. Paul? What other city of Minnesota is near it? What can you say of the industries and trade of these cities? What are the chief features in the trade of Kansas City? What is its rank as a railway centre? Name the leading manufactures of Omaha, — of Louisville. Of what agricultural staple is Louisville the world's greatest market? Give some account of the commerce and manufactures of Cincinnati, — of Pittsburg. What natural advantages for trade have these cities?

VIII. — OTHER CITIES AND TOWNS

In addition to the foregoing cities that owe their prosperity in a greater or less degree to their facilities for water transportation, there are many other cities throughout the country that owe their development to other causes, such as nearness to coal-mines, abundance of water-power, or to railway facilities. Among them the following are mentioned, with their chief industries.

In Maine: — *Bangor*, lumber trade; *Auburn* and *Lewiston* on the Androscoggin, *Biddeford* and *Saco* on the Saco, cotton and woollen goods; *Calais*, ship-building; *Rockland*, making of lime and ship-building.

In New Hampshire: — *Manchester* ranks fourth among the cities of the country in the manufacture of cotton goods; *Nashua* and *Dover* also have important cotton and woollen factories; *Concord*, well known for making coaches and wagons.

In Vermont: — *Burlington*, one of the largest lumber markets in the United States, and a large variety of manufactures; *Rutland* and *Middlebury* supply white and variegated marbles.

In Massachusetts: — *Lowell*, second among the cities of the country in the amount of cotton manufactured; *Lawrence*, cotton and woollen goods; *Worcester*, numerous machine-shops, and the most extensive wire-factory in the world; *Attleboro*, one of the largest jewelry manufacturing towns in the world; *Springfield*, seat of the United States armory where the Springfield rifles are made, and the largest envelope manufacturing city in the world; *Holyoke*, the greatest paper manufacturing city, whence comes half the paper used in the United States, also extensive cotton factories; *Waltham*, the largest watch-factory in the world; *Lynn*, the largest manufacturing city of boots and shoes and electrical appliances in the world; *Salem*, coasting trade in ice and coal, and manufactures of leather and cotton goods; *Brockton*, boots and shoes.

In Connecticut: — There are a greater variety of manufactures than in any other state. *Willimantic* has the largest thread-works in the country; *Hartford*, firearms, bicycles, and envelopes; *Waterbury* manufactures about three-fifths of all the brass made in the United States, using yearly about 3,000 tons of raw copper; *Meriden*, tinware, britannia, and silver-plated ware; *Norwich*, cotton goods, paper, and machinery of various kinds; *New Haven* (see p. 73) has about 800 manufacturing establishments; *Bridgeport*, carriages, sewing-machines, hardware, machinery.

In Rhode Island: — *Woonsocket*, the most extensive woollen-mills in the country, if not in the world, the greatest rubber-shoe factory in the world; *Pawtucket*, very extensive calico-printing and cloth-bleaching establishments.

In New York: — *Troy*, engineering-works, collar and cuff factories; *Yonkers*, carpet and other woollen factories; *Rochester*, flour, boots and shoes, clothing, and the most extensive nurseries of fruit and ornamental trees in the world; *Syracuse*, salt-works, and iron and steel manufactures; *Utica* and *Little Falls*, great cheese-markets; *Auburn*, agricultural implements and woollen and cotton fabrics; *Elmira*, large iron and steel manufactures; *Cohoes*, cotton goods, and the centre where a third of the hosiery of the country is made; *Geneva*, extensive nurseries of fruit-trees and other trees and shrubs; *Gloversville* and *Johnstown*, seats of two-thirds of the leather-glove and mitten manufacture of the country; *Schenectady*, machinery and electric works.

In New Jersey: — *Trenton*, extensive pottery works; *Newark*, manufactures in great variety, among them rubber goods, jewelry and clothing; *Paterson*, the centre of the silk industry of the country, also of cotton and linen thread making;[1] *Jersey City* (see p. 67), watches, glass works, crucibles and lead-pencils, steel works, locomotives, and extensive abattoirs; *Elizabeth*, sewing-machines, pottery, oil cloth, hats, machinery, and hardware.

In Pennsylvania: — *Allentown*, *Bethlehem*, *Easton*, and *Reading*, iron and steel; *Wilkesbarre* and *Scranton*, coal-mines; *Williamsport*, a great lumber-market; *Pottsville*, coal and iron; *Altoona*, large car and locomotive works and repair-shops; *Oil City*, centre of the Pennsylvania petroleum fields; *Erie*, oil refineries, leather foundries; *Lancaster*, cotton goods, leather, potteries, machinery, and implements.

In Delaware: — *Wilmington*, extensive locomotive and car-building works, also iron steamship yards, and flour-mills; gunpowder and carriages.

In Virginia: — *Richmond*, a leading tobacco-market and tobacco-manufacturing centre; *Lynchburg*, iron, tobacco, and flour.

In West Virginia: — *Wheeling*, the largest nail-manufacturing city in the country; *Parkersburg*, great petroleum refineries.

In North Carolina: — *Charlotte*, of some importance as the depot for the gold-mining district.

In Georgia: — *Atlanta*, the business centre of the South, and one of the chief tobacco-markets south of Richmond, various manufactures; *Augusta*, cotton trade and cotton mills; *Macon*, cotton, iron, and machinery; *Rome*, iron; *Columbus* has a good water power, and the manufacture of cotton and woollen goods is increasing.

In Alabama: — *Birmingham*, some of the largest iron-working establishments in the country; *Huntsville*, foundries and wood-working; *Selma*, cotton.

In Tennessee: — *Chattanooga*, extensive iron-working establishments, and rapidly increasing manufactures and trade; *Knoxville* has important manufactures of iron; *Nashville*, cotton, iron, flour, and wood-working.

In Mississippi: — *Meridian* has some manufactures of cotton, iron, and wood.

In Texas: — *Waco* and *Dallas* have manufactures of iron, flour, cotton, and woollens.

In Michigan: — *Grand Rapids*, great wood-working shops, especially in furniture-making; *Saginaw*, lumber and salt.

In Indiana: — *Indianapolis*, a great railway and business centre, with iron- and steel-working establishments and farming-implement factories; *Evansville*, with near-by coal beds, has manufactures in much variety aggregating $5,000,000 worth yearly; *Fort Wayne*, railway shops and iron; *Terre Haute*, iron.

In Illinois: — *Peoria*, spirits, and beer-brewing, founderies and machinery; *Quincy*, flour and machinery; *Springfield*, flour and iron.

In Wisconsin: — *Racine*, the largest threshing-machine factory in the world; *Oshkosh*, lumber; *La Crosse*, farm machinery; *Fond du lac*, lumber, wood-working.

In Ohio: — *Columbus*, machinery, iron-working, and farm implements; *Dayton*, on the Miami, important manufactures in great variety; *Springfield*, farm implements and machinery; *Zanesville*, steam-engines, flour, iron.

In Colorado: — *Denver*, an important railway and business centre, and the seat of extensive gold- and silver-mining interests; *Leadville*, one of the leading silver-mining towns of the world; *Pueblo*, extensive smelting and rolling mills.

In New Mexico: — Trade in wool at *Las Vegas*.

In Wyoming: — *Cheyenne*, the largest cattle-market of the country.

In Nevada: — *Virginia City*, the site of the Comstock lode, the richest mines discovered during this century, whence has come much of the wealth of the Pacific coast.

In Montana: — *Butte City*, mines of gold and silver.

In California: — *Los Angeles*, the centre of an important fruit, wine, and wool-growing region. *Sacramento*, *Stockton*, and *San Jose*, great wheat-shipping points; *San Diego*, hides and wool.

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[1] The silk manufactures of Paterson have advanced in importance, corresponding with the decline of this industry in Great Britain, until now our product of manufactured silk exceeds in value that of the latter country. Here also are mills that employ 6,000 hands in making spool cotton. Paterson is favored by the great water-powers afforded by the falls of the Passaic River.

QUESTIONS

What cities of Maine have great textile industries? What fabrics are made in Biddeford and Lewiston? — In Paterson, New Jersey? Name another industry of Paterson. What cities of Massachusetts have extensive cotton-mills? — paper-mills? What are the leading manufactures of New Hampshire? What can you say of the industries of Worcester? — of Springfield? — of Waltham? What city of Vermont is the centre of the marble industry? Name the chief items of Rhode Island manufacture. In what city of Connecticut are there great thread-mills? — bicycle factories? Name some industries of Troy, — of Rochester, — of Syracuse, — of Cohoes, — of Gloversville. In what cities of Pennsylvania are there great iron-works? Name some manufactures of Altoona, — of Wilmington, — of Richmond, — of Newark, — of Wheeling. Name two southern cities that have extensive iron-works. What is the leading industry of Grand Rapids? — of Racine? — of Leadville? — of Sacramento? — of Los Angeles?

IX. — THE TERRITORY OF ALASKA

The territory of Alaska has an area of about half a million square miles, the greater part of which lies either within or adjacent to the Arctic Circle. West of the coast-range of mountains the climate is moderate, being modified by the Japan Current.

The commercial importance of Alaska lies in its fisheries. These include whales, seals, and sea-otter, salmon, cod, and halibut. The whaling is carried on by American steamers, and the annual catch is worth about one million dollars a year. Until recently the seal rookeries have paid an annual tax to the government of about half a million dollars, and have yielded furs for commerce to a much greater amount. The fishing-banks correspond in their extent, character, and abundance with the great off-shore fishing-banks of Eastern America. A number of vessels belonging to the Gloucester (Massachusetts) fleet are engaged in these fisheries.

The rivers that flow into the Pacific Ocean abound in fish, and the run of salmon in the spring is greater than that in the Columbia River. The canning of this fish is now an industry of great value.

In the southern part only are the resources of Alaska developed. The great cost of supplies and the difficulty of transportation hinder the prosecution of industrial enterprises. Gold and silver are the only minerals yet mined. Coal, copper, iron, marble, and other minerals are known to exist. The unworked deposits of coal, all of which is bituminous, are estimated to be sufficient to supply the United States for centuries.

The forests of southern Alaska, the area of which is many times that of Pennsylvania, contain valuable woods such as spruce, fir, hemlock, cypress, and yellow cedar.

Each year since its purchase by the United States the commercial value of this territory has been demonstrated. The revenue paid from it to the general government is already several millions a year, and as the rich fisheries, mineral deposits, and forests are developed, this sum must increase.

QUESTIONS

What is the area of Alaska? What is its geographical situation? What is the climate west of the coast mountains? What great ocean-current has served to moderate the climate of this section?

In what does the principal commercial importance of Alaska consist? What are the chief items of the fisheries catch? What is the estimated annual value of the whale fisheries? What revenue is paid to the general government by the seal rookeries?

What is the leading product of the river fisheries? What local industry has grown up as a result of the salmon catch?

What can you say of the mineral resources of Alaska? Why are they not yet more fully developed? What mineral deposits are known to exist? What is known of the forest area?

X. — THE COLONY OF HAWAII. See page 138.

CHAPTER III.

GREAT BRITAIN AND HER COLONIES

Situation. — The United Kingdom is composed of Great Britain and Ireland, and includes England, Ireland, Scotland, Wales, and the adjoining islands; the British Empire comprises Great Britain and all her colonial possessions. The former is situated northwest of Continental Europe, and is separated from it by the North Sea and the English Channel. The coast is irregular. The south coast of England, and the coast of Wales, have numerous fine harbors. The east and west coasts are not so well favored by nature, and shallows and bars obstruct the ports of the east of Ireland. The larger part of England is a plain of considerable fertility; Scotland and Wales are in the main mountainous; Ireland, except upon portions of the coast, is nearly level, about one-twelfth of its surface being bog and marsh land.

Among the great natural advantages of Great Britain for commerce and the industries dependent upon it are: an equable climate; abundance and convenient situation of deposits of coal and iron; convenience of access of all points to the coast, on one side or the other; central position of the British Isles among the nations that carry on a great commerce; and the number of its navigable estuaries, rivers, and good harbors. Engineering skill has greatly improved these natural facilities by supplementing them with canals, breakwaters, lighthouses, railways, and bridges.

Commercial Importance. — The British Empire is the greatest commercial nation in the world. About half its export trade is with our own country, and its commercial activities are, therefore, of the greatest importance to the United States. The principal products that Great Britain takes from us are: Cotton, wheat, corn, and flour, beef and pork, cattle, dairy products, tobacco, copper and copper goods, books and maps, leather and leather goods, petroleum, oil cake and meal, lumber, furs and skins, etc., to the amount of between three and four hundred millions of dollars annually.

The principal products that we take from Great Britain in exchange for these are: Manufactures of cotton, iron and steel and their products, woollen goods, silk fabrics, chemicals and drugs, tin, hides and skins, china and porcelain, jewels and jewelry, leather and leather products, dressed furs, linen goods, and many other articles, to the amount of between one hundred and two hundred millions annually.[1]

[1] In 1894 England and Wales exported to the United States: Iron and steel products to the value of $17,270,000; woollen goods, $12,909,000; silk goods, $2,245,000; cotton goods, $6,948,000; chemicals and drugs, $5,037,000; wool, $1,477,000; tin, $6,243,000; hides and skins, $2,965,000; china and earthenware, $3,230,000; jewels and jewelry, $1,570,000; leather and products of leather,

Great Britain is a great "jobbing" and distributing nation; and it is estimated that one-fifth of the total value of British exports represents articles that have been collected from various parts of the globe, to be as widely distributed again in other parts. This is especially true of such materials as cotton, wool, and silk, imported in the raw state, and exported to all parts of the world as manufactured goods. British ships have also a large share of the carrying-trade of other nations. It is claimed that Great Britain not only carries three-fourths of her own immense commerce, but over one-half that of the United States, Portugal, and The Netherlands, nearly half that of Italy and Russia, and more than one-third that of France and Germany.

I. ENGLAND AND WALES. — The area of the United Kingdom is a little over 120,000 square miles, or nearly three times that of the state of Ohio. England is the largest division, and, with Wales, embraces half the kingdom.

About one-third of the area is cultivated; but, owing to the close competition of imported grain, agriculture is largely directed to small crops and garden vegetables. The grazing area is large, and is mainly devoted to the raising of thoroughbred horses, sheep, and cattle. These animals are reared with great care, and are

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$1,766,000; furs and manufactures of furs, $1,711,000; furs and fur skins undressed, $1,045,000; india-rubber, $1,413,000; cement, $1,276,000; linen goods, $2,537,000; together with books, maps, etc., glass and glassware, paper-stock, vegetables, malt liquors, various metal products other than steel or iron, paints and colors, confectionery, hair, salt, seeds, soap, fish, and other products, to the total value of $89,327,000. In 1891 the total exports to the United States were nearly $170,000,000.

The imports into England in 1894 were: Cotton, $116,720,000; breadstuffs, $55,848,000; beef and pork products, $72,661,000; cattle, $28,750,000; dairy products, $5,994,000; tobacco, $8,260,000; copper and copper goods, $9,316,000; leather and leather goods, $10,385,000; kerosene, $10,193,000; oil cake and meal, $3,584,000; lumber and timber, $6,543,000; fur and fur skins, $3,425,000; paraffine and paraffine wax, $2,240,000; iron and steel goods, $3,501,000; turpentine and naval stores, $2,606,000; fertilizers, $1,137,000; fish and shell-fish, $1,163,000; chemicals and drugs, dyes, etc., $1,591,000; cotton goods, $1,007,000; hops, $3,502,000; glucose, $2,004,000; together with horses, sheep, books, maps, brass and brass goods, carriages and horse cars, clocks, watches and parts of, soap-stock, hair, hay, musical instruments, seeds, molasses, and other products, to the total value of $374,915,000.

In 1894 Scotland exported to the United States: Linen to the value of $3,329,000; burlaps, $3,329,000; cotton goods, $1,286,000; together with wools and woollen manufactures, fish, books, maps, engravings, chemicals, drugs, and horses, to the total value of $11,375,000. In 1890 Scotland exported to the United States similar goods to the value of $19,600,000.

The imports into Scotland in 1894 from the United States were: Breadstuffs, $17,369,000; beef and pork products, $6,440,000; cattle, $3,595,000; wood, lumber, and manufactures of, $2,531,000; tobacco, $888,000; cotton and cotton goods, $670,000; together with dairy products, paraffine, naval stores, iron and steel, and manufactures of, hops, hair, glucose, chemicals, drugs, etc., to the total value of $37,798,000.

In 1894 Ireland exported to the United States: Linen to the value of $4,790,000; flax, hemp, burlaps, etc., $457,000; cotton and manufactures, $496,000; malt liquors, $363,000; together with paper, spirits, hides, oatmeal, and other products, to the total value of $6,670,000.

The imports into Ireland in 1894 from the United States were: Breadstuffs, $16,234,000; oils, $519,000; wood and its manufactures, $546,000; oil cake and meal, $277,000; together with turpentine, rosin, fertilizers, seeds, and other products, to the total value of $18,345,000.

unexcelled. Agriculture is of little value commercially. The food supply of the kingdom comes chiefly from other countries. In 1894 food-products were imported to the value of about $650,000,000. The number of people of England and Wales classified as agricultural is about five per cent. of the whole population.[1]

These countries abound in minerals. In the matter of coal-production Great Britain stands pre-eminent among nations. The United States, which is second among coal-producing nations, has an annual output about half as great. The mines are situated in the northern and northwestern part of England, and in Wales. Iron, the mineral next in value, is frequently found in close proximity to the coal. Great Britain ranks second in production of pig-iron; but the product of the home mines does not supply the home demand, and one-fifth of the amount used is imported. In the production of steel, Great Britain ranks next to the United States.[2] Clay is third in value among mineral products, and is used in brick and terra-cotta work, while the finer grades are extensively manufactured into porcelain and chinaware. The clays are found mainly in the southern part of England. The china and porcelain ware are made chiefly in the vicinity of London. The earthenware export is almost wholly to the United States and the various British dependencies. Tin, an important mineral product, occurs exclusively in the ancient and still productive mines of Cornwall, but Great Britain imports more tin than she produces. Salt, lead, and slate are among the lesser economic minerals.

The fisheries give employment to 50,000 men in England, and as many more in Scotland. The English fisheries are of great variety, while in Scotland the chief catch is composed of herring, haddock, and cod. Owing to the dangerous location of the principal fishing-banks, and to the inaccessibility of the chief markets for fresh fish, the value of the fish caught in Irish waters is relatively small.

Great Britain is probably the greatest manufacturing country in the world. In England and Wales over twenty-five per cent. of the population are dependent upon the factories. Cotton-manufacture is the most important, and the product forms nearly a third of the total value of the manufactures exported. This industry is situated mainly in the northwest of England. More than a third of the total cotton crop of the world is consumed in the factories of Great Britain. These factories have more than half the total number of spindles of the world, and three times as many as the United States. Iron and steel manufactures are next in value for export. This industry is centred in the neighborhood of the coal-mines. Some pig-iron is shipped, but nine-tenths of the product is manufactured before it is exported. Great Britain produces about one-third of the pig-iron made in the world, and about the same percentage of the steel. Woollen manufactures stand third in value as

[1] An English journal recently said: "Landlords desire no improvements to be made on their lands if they have to pay for them. The result is that tenant farmers make no improvements, and are, in consequence, deficient in intelligence and energy. American, Canadian, and Australian farmers have every inducement to improve their holdings, because they work on their own land. British farmers are thus prevented from helping themselves, while foreign competition is encouraged."

[2] In 1892 the United States made nearly 5,000,000 tons of steel, being one-quarter more than was made in Great Britain. The pig-iron output of Great Britain in 1892 was 6,600,000 tons, while the United States produced over 9,000,000 tons the same year.

exports. This industry, like other leading ones, has its principal seats in the northern part of England. It is estimated that more than half the world's wool supply is here converted into fabrics. Flax manufacture is confined chiefly to Ireland, and jute manufacture to Scotland. Silk is made in and about London, but the product is small when compared with that of other textile fabrics.

England is provided with the best roadways in the world.[1] In connection with them the natural waterways have been improved for navigation. As many as fifty rivers are said to be more or less navigable, but only four are of great commercial value. These are the Thames, the Humber, the Mersey, and the Severn; and except for boats of very light draft, engaged in passenger traffic, only the estuaries are navigable. Nearly 2,500 miles of canal, in connection with the rivers, form auxiliary highways of great value. The roads, canals, and navigable rivers serve as feeders to the railways, the great highways of internal commerce. A network of lines covers the mining-districts, connecting them with the industrial and commercial centres. Trunk lines penetrate the less populous districts, joining the large centres in the various parts of the kingdom.

LEADING COMMERCIAL CITIES

London, the capital of the United Kingdom, is situated on the Thames, sixty miles from the sea. The river here is thirty feet deep at high tide. As a port, London includes the whole of the river as far as Gravesend. Its situation at the head of ocean navigation, on a river which allows ocean vessels to ascend far into the interior of the kingdom, gives it a commanding position for continental trade, and for all trade carried on by eastern and southern routes. It accordingly holds a leading place among the seaports of the world, as it is the world's financial centre. It is also the largest city, the population being about four millions. Before the discovery of the New World, England had no very extensive commerce, but the little that existed was carried on from London. With the development of the wealth of the Americas came many voyages of discovery. But while the voyages of the Spanish, Portuguese, and others were chiefly of adventure, the voyages of the English were for commercial ends. Then followed the change in the trade between eastern Asia and western Europe from caravans to the sea-route around the Cape of Good Hope. The centre of the commercial world was thus changed from Italy to Great Britain.

London is the centre from which this trade has been mainly carried on. For years this city practically controlled commerce with the West Indies and China; but the opening of the Suez canal has reduced this traffic relatively, and increased the commercial importance of some other ports. Another cause that has cost London some of her commercial importance is the great increase of manufacturing in the northern part of England, and the consequent direction of traffic to adjacent

[1] The Romans introduced the art and the science of road-making into England, and evidences of their work are still to be seen.

ports, especially to Liverpool. Nearly all the chief railway lines of Great Britain radiate from London, and these are an important factor in the commercial supremacy of the city. A great variety of industries is carried on in London, but in no one industry is the city pre-eminent.

Liverpool, at the mouth of the river Mersey, has a population about one-sixth that of London, yet its commerce is but little inferior to that of the former city. A large proportion of the traffic between England and the United States, both passenger and freight, goes through Liverpool. Liverpool is also the shipping port for industrial England, most of the raw materials being imported and most of the manufactured goods being exported at this port. The importance of London's shipping is largely due to its control of nearly all the coasting-trade. Early in the last century Liverpool was but a small place. Its importance grew with the development of cotton and woollen manufactures in the region lying behind it. The river Mersey, as a harbor, is capacious; but the building of docks and quays has been necessary for commerce, and the six or seven miles of continuous docks on the Liverpool side of the Mersey is unparalleled elsewhere. The port of Liverpool also includes the docks on the opposite side of the river at Birkenhead, which is a commercial "annex," the two cities being connected by a railway under the Mersey. The aggregate water space of the Birkenhead docks is more than 500 acres, and the length of the quays upwards of thirty-four miles. Liverpool possesses the finest facilities in the world for the handling of merchandise.

Newcastle, near the mouth of the Tyne, on the extreme northeastern coast, is the third port in the amount of tonnage. Its exports are almost entirely coal, iron, and iron and steel products manufactured in the vicinity.

Cardiff, the chief harbor of Wales, exports coal and iron, and the iron and steel goods manufactured there and in the adjoining inland districts.

Portsmouth and **Plymouth,** both situated on the English Channel, are the headquarters of the British navy. They have no great commercial importance. Other ports that carry on more or less commerce are: **Southampton,** near Portsmouth; **Bristol,** at the mouth of the Severn; **Sunderland,** on the coast near Newcastle; **Hull,** about one hundred miles south of Sunderland; **Cowes,** on the Isle of Wight; and **Swansea,** near Cardiff, in the south of Wales. A large amount of ship-building is done at Newcastle, Sunderland, and neighboring ports. **Hull** is the principal port of the English fisheries.

Manchester is the most important of the *inland* industrial cities of Great Britain. It is the greatest cotton-manufacturing centre in the world, and in all the neighboring towns the manufacture of cotton textile goods, and of the machinery for making them, is the chief industry. For more than three hundred years Manchester has been famous for its woven fabrics, and there is scarcely a part of the civilized world in which the products of its factories have not been used. For one hundred and fifty years Manchester has been connected with the port of Liverpool by a canal, but the capacity of the latter has long been insufficient for the great increase of trade, and a new ship canal was opened for traffic in 1893. This canal, one of the most notable efforts of modern engineering, includes a system of wharves and docks which now makes it as valuable commercially as the mouth of the Mersey. This work not only gives Manchester direct open traffic to the sea, but, by

avoiding the necessity of lighterage, it also effects a great saving to both import and export trade.

Birmingham has long held the first place in the industrial world as a hardware manufacturing centre. There are abundant deposits of iron ore in its vicinity. The city is celebrated for its manufactures of brass goods, jewelry, screws, steel pens, and other small hardware, as well as for iron goods, and machinery of every description.

Coventry has large bicycle, sewing-machine, and other factories. **Sheffield** has extensive cutlery works. **Leeds** is the great woollen-manufacturing centre of Great Britain. It is situated in the coal and iron region, and the manufacture of machinery and other iron and steel articles is also important. **Bradford** is another large woollen-manufacturing centre.

At **Burton on Trent** more beer-brewing is done than in any other town in the world. **Northampton** and vicinity is the seat of much of the shoe-manufacture of the kingdom.

II. SCOTLAND. — Scotland has an area half as great as that of England and Wales, and about one-seventh their population. It includes 186 islands adjoining the coast. More than three-fourths of the area of Scotland is sterile, consisting of mountain, moor, and other waste lands. One-fifth of the area susceptible of cultivation is covered by forests. The northern part is high and rough, crossed by many deep valleys, and penetrated by long arms of the sea. It is sparsely inhabited. In the south the land is rolling, and better fitted for tilling.

Agriculture is carried on with much skill and energy. Cereals are more extensively raised than in England; yet the main supply of food is imported. The population engaged in agriculture is about one-quarter that employed in the factories. Coal and iron abound in the south, and have promoted the industrial growth of Scotland. Iron is extensively wrought. Coal enough is mined to form an export. The quarrying of granite forms a considerable industry.

The chief industries of Scotland are concerned with the manufacture of vegetable fibres. The manufacture of flax, hemp, and jute receives especial attention; that of woollen fabrics is nearly as important, and in the quality of the product, Scottish goods are unequalled. The value of the cotton-maufactures is about one-half that of all the textile products. The making of liquors, spirituous and malt, is largely carried on.

In ship-building, the Scots stand pre-eminent, not only in the amount of tonnage, but in the quality of the vessels. The majority of the iron and steel steamships sailing under all flags, except the American, are built in Scotland. A law of the United States, intended to protect American ship-builders, requires that all vessels flying the American flag must be American-built.

Scotland, considering the mountainous nature of the country, is well provided with roads, and the industrial, mining, and commercial centres are connected by railways. Waterways exclusive of harbor improvements are of little moment. A canal from Moray Firth on the east, to Loch Linnhe on the west, crosses the

northern part of the country, and saves the boisterous voyage around the north to vessels of light draught. Edinburgh and Glasgow are connected by canal.

The industrial growth of Scotland is comparatively recent, and most of the commercial development dates from the introduction of steamships.

Glasgow, situated on the River Clyde, twenty miles from the Firth of Clyde, is the second city of Great Britain. The river has been greatly improved for navigation by the removal of bars and ledges, and its depth has been increased to over twenty-two feet. Within the last few years commerce has increased with astonishing rapidity. On the banks of this river are a succession of shipyards, where most of the great transatlantic and other ocean steamships have been built. Owing to the proximity of coal and iron mines, Glasgow is a great industrial centre. The American civil war benefited the city greatly by stimulating ship-building. Fabrics of all kinds are made in the city and outlying districts. A great deal of bleaching, printing, and dyeing is done, and in dyeing certain colors, and printing ginghams, calico, and other goods, the city has a world-wide reputation. There are many chemical-manufacturing and metal-working establishments, the latter being connected principally with the ship-building industry. Most of the commerce between Scotland and the United States passes through Glasgow. It is the only port of much importance on the west coast.

Dundee, on the Frith of Tay, twelve miles from the sea, is the second port in commercial importance. It is the seat of the British whale and hair-seal fisheries. The city also carries on a considerable commerce, particularly in vegetable fibres. More linen is made here than in any other city in England or Scotland. There are also extensive manufactures of jute and hemp, and the greater part of the people are dependent upon these industries. Ship-building is next in importance. The harbor of Dundee is the best in Scotland.

Aberdeen is the chief seaport of the north of Scotland. It has a considerable fishing-fleet. The commerce is nearly all coastwise. Ship-building is one of the most important industries of the city. Woollen, linen, cotton, and paper are manufactured, and the largest comb-works in the world are in Aberdeen.

Edinburgh, the ancient capital of Scotland, is situated on the Firth of Forth on the east coast. It is one of the chief educational centres of Great Britain. Printing and kindred arts are the most important industries. Among others of consequence is wood-working.

Woollen manufacture was first carried on in the valley of the River Tweed, near the southern border of Scotland. The quality of the goods was distinctive, and the product, to this day called "tweeds," has taken its name from the region. The goods are now made in other parts of Scotland, and in other countries, though **Hawick** and **Galashiels,** in the Tweed Valley, still manufacture large quantities. **Paisley,** a thread and woollen manufacturing centre near Glasgow, was once famous for its shawls, which were an excellent imitation of the Persian.

III. IRELAND. — Ireland lies west of England and Scotland, and is separated from them by St. George's Channel, the Irish Sea, and the North Channel. It has an area a little greater than that of Scotland.

The surface of the island is generally level, and, the rugged western coast excepted, low. The interior plain is so level that in many places the water does not drain off sufficiently to admit of cultivation. Thus large areas of bog-land and marsh are formed, and these cover one-twelfth of the island.

Agriculture is more generally followed in Ireland than in either England or Scotland, and a third more people are dependent upon the soil than upon manufacturing. The climate is equable, the soil very fertile, the various food-products abundant, and the people remarkable for physical and intellectual vigor. The soil is mainly owned by English proprietors, by whom the Irish people have been greatly oppressed. So large a proportion of the products of Irish industry are annually drained off to England to pay rents for the land of Ireland, that what remains is hardly enough, even in the best of seasons, to supply the simplest necessaries of life. These rents are paid by the Irish "tenant-farmers," whose condition it is the object of the present parliamentary agitation to ameliorate, by reduction in rents, and by conceding to the Irish people some share in the management of their domestic concerns. It is difficult, however, to see how any of the proposed reforms can benefit the farm laboring-class, who are much more numerous than the tenant-farmers, and whose condition is far more pitiable.

The system of land tenure, commonly known as rack-renting, is one that is rapidly depopulating the island and reducing its productiveness to the lowest degree. Almost the whole area is owned by a few English proprietors, and they let and sublet their estates in small holdings to their various tenants. No improvements are made by the landlords themselves, and when any are made by the tenant, his rent is promptly and arbitrarily raised. During the past fifty years the struggle of the people has been not so much for the comforts of life as to ward off actual starvation. More than once, famine and its attending horrors have swept away thousands, and the population which, according to the law of increase, should have doubled in twenty-five years, has actually decreased. In fifty years it has fallen from 8,000,000 to less that 5,000,000, though much of this decrease is due to emigration.

The principal crops are oats and potatoes, though in the north flax is more extensively cultivated than anywhere else in the United Kingdom. Grazing brings considerable returns; and butter, cheese, and meat are exported, chiefly to England. Two-thirds of the arable area is devoted to pasturage.

The fisheries of Ireland, chiefly cod, mackerel, and herring, give employment to about 25,000 men.

Several varieties of minerals are found in Ireland, but they are little developed. Fifteen times as much coal is imported as is mined. Peat, dug from the bogs, is the fuel used by many of the people. Several rich deposits of iron ore exist, but the lack of coal prevents their development. What little iron is produced is exported. Gold, sulphur, silver, lead, and copper are found, but in small quantities.

In proportion to the population manufactures are not so active now as two centuries ago. The lack of coal is compensated to a considerable extent by the amount of water-power at hand. Burdensome laws, enacted a century ago to

build up English at the expense of Irish industries, so crippled the manufactures of Ireland that they have never fully revived. Four or five centuries ago Ireland exported woollen goods to Italy, France, and Spain. Now much of the woollen cloth used in the island is imported. The linen industry did not suffer so much as the woollen industry, and of late years this has greatly revived. As a linen-producing country, Ireland now leads all others. The only other products of commercial importance are whiskey and malt liquors. Irish whiskey has for centuries rivalled the Scotch product.

The Shannon is the largest river in Ireland, and drains the central portion of the island. It is navigable a considerable distance. Canals are more used in Ireland than in other parts of the kingdom. The chief canals are those connecting Dublin, on the east coast, with the Shannon valley. The Grand canal runs east and west, while the Royal canal runs from northwest to southeast. The island is provided with a good railway system.

Belfast, on the northeast coast, is the most prosperous city of Ireland, and Belfast linen is known in nearly all the shops of the world. It carries on a considerable commerce, but linen spinning and weaving absorb most of its energy. So extensive has this industry become that of late years quantities of flax are imported from Russia, Germany, and elsewhere. Linen cloth, thread, and yarn are the staple exports of the city.

Dublin, the capital, is situated on the east coast. It has a good harbor, but does not compare in the amount of its commerce with Belfast. Its industries are chiefly the manufacture of whiskey and porter, and these products are also the principal exports.

Cork, on the southern coast, exports dairy products, chiefly butter, from the surrounding country. It also exports some liquors manufactured in the city.

Queenstown is the port through which the commerce of Cork is carried on. It is the first stopping-place for vessels plying between New York and Liverpool.

Limerick, on the estuary at the mouth of the Shannon, is the chief port on the west coast. Some linen is manufactured here.

Balbriggan, on the coast, about twenty-five miles north of Dublin, has given its name to fine qualities of hosiery and knit goods.

QUESTIONS

What countries compose the United Kingdom of Great Britain and Ireland? What is the nature of the coast of England and Wales? What is the character of the surface of England? — of Wales? — of Scotland? — of Ireland?

Enumerate some of the great natural commercial advantages of this kingdom. What is its comparative standing in the world's commerce? With what country is its export trade greatest? What are the leading imports of Great Britain from the United States? What are its principal exports to the United States?

What proportion of British imports are re-exported? In what respect do these imports differ from the same exports? What character of merchandise chiefly makes up the re-exporta-

tions? Is the carrying-trade of Great Britain confined to British merchandise? For what other countries is Great Britain a transporter of merchandise?

What is the area of the kingdom? What proportion of this do England and Wales, taken together, represent? What proportion of the area of these countries is cultivated land? Whence does the food-supply mainly come? What two minerals are of great importance to the industries and commerce of the kingdom? What is the relative position of Great Britain and the United States in the output of coal? — of iron and steel? What mineral product of Great Britain is next in value? What other mineral products can you name?

Give some account of the fisheries of England, — of Scotland, — of Ireland. Why are the fisheries of Ireland of comparatively little value? What is the rank of Great Britain as a manufacturing country? What proportion of the inhabitants of England and Wales are dependent on manufacturing industries? What is the leading item among manufactures? What proportion of the world's cotton crop is consumed in British manufactures? What item, among manufactures, stands next in importance, in the value of the product? What item third? What can you say of English internal trade-routes?

What is an estuary? Give some account of London, its situation, population, rank in commerce and finance, and importance as a seaport. What gave rise to the first great commercial importance of this city? How has its trade been affected by the opening of the Suez canal? — by the growth of other ports in the north of England?

Describe the situation of Liverpool. Why has its commerce become of such great importance? What is the extent of the Liverpool and Birkenhead docks and quays? Describe the situation and commercial character of Newcastle, — Cardiff, — Portsmouth, — Plymouth, — Southampton, — Bristol, — Sunderland, — Hull, — Cowes, — Swansea.

What inland city of England takes first rank as a manufacturing centre? What are the principal factory products of Manchester? By what great public work is Manchester to secure ship-communication with Liverpool? For what industries is Birmingham chiefly celebrated? — Coventry? — Sheffield? — Leeds? — Bradford? — Burton-on-Trent? — Northampton?

What is the area of Scotland as compared with England and Wales? What is the nature of its surface? What can you say of its agricultural interests? What are its principal mineral products? Name its chief industries. In what industry are the Scotch pre-eminent? What city and its vicinity form the principal seat of the ship-building interests? What are the leading manufactures of Glasgow? Describe the situation of Dundee, and give some account of its industrial and commercial activities, — of Aberdeen, — of Edinburgh, — of the Tweed valley, — of Hawick, Galashiels, and Paisley. What can you say of the internal trade facilities of Scotland?

Describe the situation, comparative area, and surface characteristics of Ireland. What is the nature of its soil and climate? Why are the Irish people, though inhabiting a fertile country, so poor? What is said concerning the present tenantry system? Name the principal products of Ireland. What proportion of Irish land is devoted to grazing?

What are the mineral deposits of Ireland? What is their state of development? Why are Irish manufactures in a backward condition? In what industry is Ireland the leading country? What other industry is of considerable importance? Give some account of the commercial interests of Belfast, — of Dublin, — of Cork, — of Limerick, — of Balbriggan. What is the largest river in Ireland? What can you say of Irish canals and railways?

IV. BRITISH POSSESSIONS IN ASIA. — The possessions of Great Britain in Asia consist of India, Ceylon, Hong Kong, the Straits Settlements, and Aden.

The Indian Empire. — The peninsula between the Arabian Sea on the west and the Bay of Bengal on the east, and the province of Burmah which extends west and north from the Bay of Bengal, constitutes British India. It comprises several provinces and many native states, with a total area about one-quarter that of the United States and a population four times as great. The Himalaya Mountains on the north are

impassable except through a few narrow defiles. To the westward is the Indus River, which, for 1,800 miles, flows through a valley of great fertility. Owing to bars and other obstructions, the river is not navigable. At the east are the Ganges and the Bramaputra rivers, which unite, their mouths forming the "great delta of the Ganges." These rivers flow southeastwardly through very fertile valleys. The Ganges is 1,500 miles long, and navigable for two-thirds of the distance. The Bramaputra is an important highway of commerce. In the latter part of its course it is several miles wide. The Irawaddy River in Burmah is navigable for 700 miles from the sea. Back from the rivers and their valleys the highlands are generally sterile, and a tenth part of the cultivated area is said to depend upon irrigation.

Under English influence India has developed wonderfully, and become of great importance to the commercial world, both as a producer and consumer. Since 1840 the imports have increased nine-fold, and the exports seven-fold; but commerce is under English control, and the country has not the trade value to the United States, either present or prospective, that China, Japan, and other countries have. By a good railway system the producing centres of India have been brought into close communication, and many sections, distant from the coast, can thus dispose of their products to advantage.

The climate is tropical, and a great variety of crops is raised. These are chiefly millet, rice, indigo, wheat, tea, poppies, cotton, jute, linseed and various other oil-seeds, sugar-cane, and tobacco. Fruits, spices, perfumes, drugs, and dyes are other products. Valuable minerals abound, although the country is essentially agricultural. Rice, which is raised chiefly in the plains of the Ganges, is the food of a third of the population. Wheat and cotton are grown in the central and northwestern parts; tea in the northeast; tobacco, a rapidly increasing crop, in the rich bottom lands; and the opium poppy in the Ganges valley. The sale of opium is a government monopoly. Much of the hillside country, nearly one-twelfth of the whole area, is covered with forest and jungle, and the cutting of timber is regulated by the government. Teak, a wood highly valued in ship-building, is most in demand. Cashmere, one of the most northern provinces, is famous for its shawls, made from the wool of the Thibet goat. But the French and other manufactures have so closely imitated these shawls that the industry is declining, and silk-manufacture is taking its place.

In 1894 the commerce of India was valued at about $600,000,000, two-thirds of it being exports. Forty per cent. of the exports and seventy per cent. of the imports were with Great Britain, by way of the Suez canal.[1] Of India's total trade the United States furnished less than two per cent. of the imports (almost solely

[1] The chief exports from India in 1894 were rice, wheat, and seeds, to the total value of $97,000,000; cotton and cotton fabrics to nearly $60,000,000; opium about $26,000,000; and in the order of their value, jute, raw and made up, tea, indigo, coffee, wool, lac, sugar, and silk. The Indian tea crop is claimed by some to be equal to that of China. Of the imports, cotton goods were by far the most important, being in value over $100,000,000. Articles of steel and iron were next, with oils, silk fabrics, sugar, machinery and mill work, woollen goods, provisions, liquors, and coal in the order of their value. The frontier trade, by caravan and otherwise, is estimated at about 25,000,000 annually.

kerosene), and purchased only about four per cent. of the exports. Of great interest to the United States is the rapid increase in the export of wheat from India. She is already near to us in the quantity of her crop, and her competition is closely felt.[1] Her manufactures in the coarser grades of cotton cloth are also competing in the Chinese, East African, and other markets.

India has many large cities, but only a few of them are of commercial importance, and with 9,000 miles of seacoast there are very few good harbors.

Calcutta, the capital, has a large fraction of the trade of the empire. It is on the Hoogly River, a branch of the Ganges, eighty-six miles from its mouth. The population is nearly one million. The harbor extends up and down the river for ten miles, and is an expensive one to maintain, owing to the shifting sands. Calcutta carries on a large export-trade in cotton and cotton fabrics, grain, hides, indigo, jute, opium, tobacco, tea, and cinchona. **Patna,** farther up the Ganges, is the centre of opium-raising, but most of the exporting is through Calcutta. **Amritsar,** in the extreme northwestern part, among the mountains, is the centre of the Cashmere-shawl manufacturing and trade.

Bombay, on the western coast, has the finest harbor of India, and is the nearest port to Europe. Its population is somewhat larger than that of Calcutta, and it has quite outstripped the capital as a commercial centre since the building of railroad connections with the interior. Considerable ship-building is done, and it is the centre of the manufacture of cotton cloth. Its growth began at the time of our own short cotton crop, during the civil war, and its prosperity has been based chiefly on cotton and the manufacture of cotton fabrics. It is also the outlet for the rich Punjab and other wheat-producing sections. **Calicut,** a small city on the coast, south of Bombay, is said to be the city where calico was first made, — hence the name of the fabric. **Madras,** on the east coast, is the third commercial town of India, and has a good harbor, recently constructed. **Rangoon,** on the delta of the Irawaddy, is the chief harbor of British Burmah: [2] it exports rice and teak.

Ceylon. — The island of Ceylon, situated just off the south-eastern extremity of the Indian peninsula, has an area about half that of Alabama, and a population equal to that of Switzerland. Since a very remote period the island has been in a high state of cultivation, and the system of irrigation upon which its crops have depended is still being improved and extended, so that each year makes the island more fruitful. The products are very numerous, but coffee is the most important. Cinchona bark, cocoa, tea, spices, copperas, plumbago, and tobacco are other exports. Of these the United States takes three-fourths of the plum-

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[1] India raises one bushel of wheat per head of the population, the United States raises seven bushels per head. The people of India require by far the largest proportion of their wheat product for food and seed. Their home consumption of wheat is said to increase every year, while the people of the United States, after appropriating five bushels per capita, have a surplus for export equal to one-half the entire crop of India.

[2] The finest ruby-mines in the world are in Burmah, and amber is found in large quantities. Crude petroleum is also produced. Cotton, hides, tea, and spices are important exports. The fisheries are the most valuable in southern Asia.

bago and cocoa. In manufactures the people are skilful, especially in working gold, silver, ivory, and tortoise-shell, and in wood-carving. The pearl-fisheries of the island are at times of considerable value. *Trincomali*, on the east coast, has one of the finest harbors in the world, and is the depot of the British navy in the East Indies; but *Colombo* is the capital and chief commercial town.

Hong Kong. — Hong Kong is the fourth port in the world in the amount of shipping that passes through its waters. It is situated on Victoria Island, lying off the mouth of the Canton River. It has a fine harbor, and is an important coaling-station. Direct steamship communication is carried on with India, Australia, the United States, and the principal commercial centres of Europe. It is the seat of the banking-interests of the East, and practically controls the sea-going trade of China — the exports of tea and silks, and the imports of textile fabrics, iron manufactures, opium, and other articles. Its growth is chiefly due to the fact that a commercial centre was needed where goods could be safely stored; and, prior to the cession of Hong Kong to Great Britain, China had never furnished such a port. The city has grown into commercial importance, and its steamship trade has been greatly enhanced by the opening of the Suez canal. Hong Kong is a coal centre at which 50,000 tons are distributed monthly, and if the coal of Tonquin can be sold cheaply in Hong Kong the latter will become a manufacturing centre. The introduction of railways into China, which is on the eve of accomplishment, will greatly increase the trade of this port.

The Straits Settlements. — The Straits Settlements comprise a number of trading stations in the Straits of Malacca, on the ocean trade-route to China. The important port of Singapore, the small territory of Malacca, the island of Penang, and a small part of the mainland of the Malay peninsula, are the commercially important parts of this colony.

Singapore is situated on a small island at the southern extremity of the Malay peninsula. From its position it commands the straits, and it is an important coaling-station. The products of the neighboring islands are collected and distributed[1] from Singapore; and the great commercial importance of this port may be seen in the fact that its total commerce aggregates an annual value of $200,000,000.[2] The chief items of this commerce are tin (exported), rice (imported), spices, opium, cotton goods, gambier, fish, gums, tapioca, rattans, and tobacco.

Aden, on the south coast of Arabia, near the Strait of Bab-el-Mandeb, possesses an admirable natural harbor, and has at different periods been of great importance in the trade between Asia, Africa, and Europe. Since the opening of the Suez canal

[1] The trade of ports like Singapore is of three kinds, — *passing*, *transit*, *actual*; passing, comprising goods in vessels going through Singapore for China or elsewhere; transit trade, goods that are landed and re-shipped for other points; actual trade, goods brought for sale into Singapore, and either consumed there, or sold to other places whither they are said to be exported.

[2] In 1893 England exported to the Straits Settlements goods to the value of more than $8,000,000, principally cotton goods, iron, and machinery. Her imports the same year were over $22,000,000, of which amount tin made one-half, the other important items being spices, gambier, and india rubber, in the order of their value.

its importance has greatly increased, especially as a coaling-station. Except for its commanding position as a station upon a great trade-route, Aden is of no commercial consequence.

QUESTIONS

Of what do the British possessions in Asia consist? How does the area of the Indian Empire compare with that of the United States? How does its population compare with our own? Give some account of the physical features of India. What are its three great rivers? Give a description of each. What can you say of the growth of Indian commerce? What of the importance of our own trade with India?

What is the climate, and what are the principal products of India? What cereal is the chief article of diet of the people? What product is a government monopoly? What is the annual value of the commerce? With what country is the greater part of the commerce carried on? What is our own share of Indian trade? What Indian product is of special interest to us as a food-producing nation?

Locate and describe Calcutta and its exports, — Patna, — Amritsar, — Bombay, — Calicut, — Madras, — Rangoon. What is the situation of Ceylon? — its comparative area? — its population? What product is most important? What other products are largely exported? What other products are mainly taken by our own importers? What can you say of Trincomali? — of Colombo?

What British colony is a Chinese port? Describe its situation. To what is its increasing commercial importance due? What are the Straits Settlements? What is the chief city? What are the principal items of the trade of Singapore, and whence are they derived? Describe the three kinds of trade of ports like Singapore. Locate Aden. What gives it commercial importance?

V. — BRITISH POSSESSIONS IN AUSTRALASIA

The British possessions in Australasia consist of the five colonies of Australia, together with Tasmania, New Zealand, and the Feejee Islands.[1]

AUSTRALIA. — Australia is the smallest of the six great Continents, having an area three-fourths that of Europe. The surface is for the most part a level plateau about 1,000 feet high with an abrupt descent near the coast. Much of the interior of the continent is arid and unproductive. A coast plain from forty to three hundred miles wide surrounds almost the entire continent. The Murray, the most important river, is 1600 miles long, but is too shallow for navigation, except by small vessels.

[1] The United States is connected with Australasia by steamship lines, and a considerable commerce is carried on both by these lines and by sailing-vessels.

In 1894 the United States imported from these colonies products to the value of $4,017,000, of which chemicals, drugs, dyes, and gums were to the value of $1,070,000; other important items being wool, textile grasses, hide and skins, coal and tin, in the order of their value.

The export trade to these colonies in 1894 reached the value of $8,131,000. The articles exported were very numerous, the following being the more important ones with their value: Iron and steel products, $1,484,000; lumber and manufactures of wood, $1,425,000; tobacco, $1,168,000; kerosene oil, $1,102,000, and to a less value were agricultural implements, chemicals and medicines, carriages and cars, fish, leather and its products, breadstuffs, books and maps, clocks and watches, glassware, paper and stationery, fruit, liquors, organs, and turpentine.

The total exports to the Australian colonies in 1891 were over $13,000,000, of the same variety of products.

The Darling and the Murrumbidgee, tributaries of the Murray, are the only other considerable rivers, and these also are of little value to navigation. The seacoast is quite regular, and there are few harbors. In proportion to their population the Australian colonies are better provided with railways than any other country of the world except the United States.

Victoria, the smallest, but most important, of these colonies, is situated at the southeastern extremity. It is mainly mountainous, and is the chief gold-mining region of the continent. The northern boundary is formed by Murray River. In other parts of the colony agriculture is, to a considerable extent, dependent upon irrigation. The colony owes its prosperity to the gold-mines, which were discovered in 1851, and which have yielded gold to the amount of $1,000,000,000. For many years past the output has been gradually decreasing, and more attention has been devoted to agriculture, grazing, and manufacturing.

Melbourne, the capital and chief seaport, has a population of 400,000. Vessels of medium draught can lie alongside the city wharves. It is the shipping-point of the products of the colony, of which wool is the most important.[1] Melbourne and other cities are fast becoming industrial centres, chiefly in the manufacture of woollen goods, but the exporting point of manufactures has not yet been reached. Melbourne is connected by railway with various parts of the colony, and also with the adjoining colonies of New South Wales and South Australia.

New South Wales, on the east coast of the continent, north of Victoria, is next to the latter in importance. It is the oldest of the colonies, having been established a century ago as a penal colony. Sheep-raising was attempted early in its history, and has become the most important industry. The mineral resources of the colony, mainly gold and coal, were developed at the same time that the gold-fields in Victoria were opened. More recently tin has been found, and the mining product is now next in value to that of wool. The surface of the country includes fertile plains, grazing-lands, forest area, and mountain-regions, — hence the products are varied. Fruits, sugar-cane, and the cereals are largely cultivated. Sheep, horses, and other domestic animals are reared, and minerals in great variety are mined.[2]

Sydney, the capital and commercial centre of New South Wales, has a population of 350,000. The harbor is deep and capacious, and is the chief naval station in Australasia for the British fleet. With an abundancce of coal, Sydney is fast becoming an important industrial centre. From its geographical situation it controls the commerce of the South Pacific, and it is connected by steamship lines with Europe, Asia, and the United States.

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[1] The export of wool for 1893 was valued at nearly $25,000,000, about half of it from Victoria, and the rest of it trans-shipped from adjoining colonies. The estimated value of the gold mined in Victoria in 1893 is $13,000,000.

[2] In 1893 wool to the value of nearly $50,000,000 was exported. The richest coal-mines of the continent are here; employing in 1893 ten thousand men. The silver and silver-lead ore product is increasing; the output during 1894 being about equal in value to that of the gold product, a value of $14,000,000.

Newcastle has come into commercial importance from its coal, which is shipped, not only to all parts of Australia, but to San Francisco, South America, the Hawaiian Islands, and other parts of the Pacific. A railway system connects the various producing centres of the colony.

Queensland, situated north of New South Wales, occupies the northeastern part of Australia. It has a dry tropical climate, but agriculture is carried on to a considerable extent. Fine, hard building-timber is abundant, though little has yet been done to develop it. The grazing interests are considerable, and large areas are devoted to sheep and cattle raising.[1] Coffee, rice, grain, and fruits are products which are rapidly coming into greater prominence.

Brisbane, the capital, exports large quantities of wool. Railways connect the important centres with one another and with the system of New South Wales.

South Australia adjoins the western boundaries of Victoria and New South Wales. It comprises much of the arid region of the continent, and the only portion inhabited is along the coast. It is essentially an agricultural and pastoral colony. Wheat is the chief crop, though only six or eight bushels are raised upon an acre of land. Other grains are grown, and flax and hops are receiving special attention. Fruit and vine culture are becoming very thriving industries. Most of the crops are dependent upon irrigation. Copper is the only metal mined to any extent. As in the other colonies, wool-growing is the most profitable business.[2]

Adelaide, with a population of 130,000, is the capital, and the only city of commercial importance. It is connected by rail with Victoria.

North Australia lies west of Queensland, and borders the north coast of the continent. It is an arid region, apparently incapable, without irrigation, of supporting any considerable population. It is attached politically to South Australia.

Western Australia comprises one-third of the area of the continent. Only the southwestern corner of it is inhabited, though the northwestern part contains fine grazing-lands. Much of the interior is a sandy region. Wool-growing is the most important industry, and the export for 1887 amounted in value to $1,250,000. The forest area is large and the timber valuable. Sandalwood and jarrah, a wood similar to the California red-wood, are exported to a limited extent. Jarrah is a very durable wood, and is particularly adapted for harbor, railway, and bridge work. The mineral deposits that have been found include large gold-fields, iron, lead, copper, and zinc. Silk-culture has been recently undertaken with success. *Perth* is the capital, and *Albany* is the principal shipping-port.

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[1] The wool export for 1893 was in value nearly $15,000,000, followed in much less value by hides and skins, sugar, tin, silver, tallow, pearl shell, and preserved meat. Mining is a most important industry, the gold product in the same year reaching $10,000,000 in value.

[2] 1893 the export of wool from this colony was valued at about $10,000,000. The export of wheat and flour, chiefly to adjoining colonies, aggregated $5,000,000.

TASMANIA, formerly called Van Diemen's Land, is an island about the size of the state of West Virginia, lying off the southeast coast of Australia. To a considerable extent the surface is mountainous and forest-covered, but the island is agriculturally rich and yields large quantities of hops and fruits. The climate is equable and healthful. Grazing is a leading industry, and Tasmanian wool is of the finest quality.[1] The forest areas afford fine woods in variety; there are extensive deposits of coal, tin, and building-stone; and gold is mined in several places. Silk-culture promises to become an important industry. Apart from its trade with neighboring colonies, nearly all the commerce of Tasmania is with Great Britain. *Launceston*, an important northern port, is connected by rail with *Hobart*, the capital and commercial centre. The latter city is the chief seaport, and has a fine harbor on the south coast. Both cities have steamship connection with Melbourne and Sydney, and maintain considerable local industries, especially in the manufacture of woollen fabrics.

NEW ZEALAND is the name given to three islands 1,200 miles southeast of Australia. Their area is about equal to that of Oregon. The surface is generally mountainous, but two-thirds of the country is adapted to agriculture and grazing. The climate of New Zealand is very salubrious, and a variety of crops and fruits are raised. The forests are extensive, and contain many valuable kinds of woods, particularly the Kauri pine, much valued for shipbuilding.[2] The pastoral interests are the most important, though mining is quite extensively pursued. *Auckland*, the chief industrial and commercial town, has a fine harbor. Steamers connect with Melbourne, Sydney, and San Francisco. *Russell* is a whaling-station. *Wellington*, the capital, contains woollen mills, and extensive meat-preserving establishments. All these places are situated on North Island. On South Island, *Dunedin*, the largest commercial town of the colony, has manufactories of woollen goods and machinery. *Lyttleton* and *Greymouth* are the other considerable towns.[3]

THE FEEJEE ISLANDS, situated about 1,200 miles east of Australia, comprise several hundred islands of which eighty are inhabited. Viti Levu and Vanua Levu are the largest and most important. The larger islands are rugged and volcanic, and are susceptible of cultivation only along the narrow coast plains. Sugar, cotton, and tropical fruits are the chief exports, and these go mainly to British markets. *Suva* is the capital and only important port.

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[1] In 1893 the more important exports were: Wool, $1,500,000; tin, $1,300,000; silver and silver ore, $800,000; gold, $600,000; and fruit, $600,000.

[2] The gum of this tree, Kauri gum, is extensively used in making varnish. Sometimes very large pieces, a hundred-weight or more, of transparent and almost colorless gum, are found near the decayed roots of a tree. This brings a high price, and is used for making ornaments. It is easily worked with a knife into any shape, and is polished with a soft rag and kerosene oil. Large masses of gum are sometimes found exuding from the living tree, but this is less valuable than the fossil gum. Three or four thousand men are engaged in digging the latter, which is found on North Island only. A fossil gum of dark color is also found in considerable quantities in the coal deposits. This fact shows the antiquity of the kauri forests.

[3] In 1893 New Zealand exported wool to the value of $17,000,000; frozen meat, $5,000,000; gold, $4,000,000; grain, $2,500,000; kauri gum, $2,000,000; and to a less value dairy products, hides, skins, and New Zealand hemp or phormium.

QUESTIONS

What British colonies compose the geographical division of Australasia? Describe Australia. What are its chief rivers? What can you say of their commercial importance? What is the condition of Australian railways?

What can you say of the surface of the colony of Victoria? To what did Victoria owe its first prosperity? What industry is now increasing in relative importance? Describe Melbourne and its industries. Give the situation of New South Wales. What can you say of its industries? — mineral resources? — agriculture? Locate and describe Sydney, — Newcastle.

Where is Queensland? What are its chief industrial interests? What is the principal export of Brisbane? Where is South Australia? What is its chief agricultural product? What business is most profitable? Locate Western Australia. What is the leading industry? What are the mineral products?

Describe Tasmania and its situation. What is the leading industry? What are the chief mineral products? Describe Launceston, — Hobart. Where is New Zealand? Give an account of its area, climate, and productions. Describe the Kauri gum, its origin and use. What can you say of Auckland? — of Russell, — of Wellington? — of Dunedin? — of Lyttleton and Greymouth? Which of these towns are on North Island? — on South Island?

VI. — BRITISH POSSESSIONS IN AMERICA

The British American possessions include nearly one-half the area of North America and a small part of South America. They comprise the Dominion of Canada and Newfoundland, a large number of the West Indies, a part of Guiana, and a few islands south of South America.

THE DOMINION OF CANADA AND NEWFOUNDLAND. — The Dominion of Canada includes the provinces of Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward Island, Manitoba, Northeast and Northwest Territories, British Columbia, and the districts of Keewatin and Athabasca. The island of Newfoundland is a geographical, but not a political, part of the Dominion.

The total area of the British possessions in North America is about equal to that of the United States, including Alaska, but the population is only one-fifteenth as large. The products are those of a rigorous climate.

The lumber regions of the Dominion are in widely separated sections of the country, one in the vicinity of Hudson Bay, in the east; the other in British Columbia, on the west. The Canadian export of lumber is about equal to that of the United States. Coal is abundant on both coasts, and the fisheries are among the most important in the world. The Canadian trade in agricultural products is constantly increasing. The registered shipping includes 7,000 vessels, and there are 15,000 miles of railway, chiefly in the eastern provinces. Manufactures have been fostered by protective tariffs; and there is now a vast number of establishments engaged in making machinery and other products of iron, leather goods, and wooden-ware. The Dominion is becoming more and more important as a factor in the commerce of the world.[1]

[1] The commerce of Canada is chiefly with the United States and Great Britain. Half the export and import trade is with the United States. The export statistics for 1893 place animals

Strong inducements are offered to immigrants by the government of Canada; yet in spite of the fact that large numbers have been led to settle upon public lands, there is a strong tendency to move across our border. Manitoba has suffered much in this way. The native population is imbued with the spirit of emigration, and it is estimated that at least a million Canadians, chiefly of French descent, have moved into states adjoining the border. Land along the Canadian line often brings only half the price of adjoining land within the limits of the United States.[1]

British Columbia, in the extreme west, is mountainous. The products are chiefly lumber and minerals. Some of the best coal-mines on the Pacific coast are on Vancouver Island. The fisheries of the Pacific are growing in value yearly, and are chiefly of cod and salmon. *Victoria*, the capital, is situated on Vancouver Island. It is connected by rail with Naniamo, the great coal-producing centre. Coal and lumber are sent chiefly to South America, Asia, and Australia. Victoria is a British naval station and the headquarters of the Canadian fishing interests in the Pacific. By the increase of traffic over the Canadian Pacific Railway it is attaining considerable commercial importance.

Manitoba, in the great central plain, contains most excellent wheat-lands, and wheat is its staple crop. It is north of Minnesota and Dakota, and is connected with the railway systems of the United States. The Red River of the North, the chief waterway of the province, communicates, through Lake Winnipeg and other large lakes, with the Saskatchewan River and Hudson Bay. Together they furnish

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and animal products first in point of value, manufactures second, agricultural products third, fishery products fourth, and products from the mines fifth.

In 1893 the exports from Canada to the United States were: Lumber and its manufactures, $8,096,000; breadstuffs, $1,387,000; cattle and horses, $1,120,000; hay, $759,000; beans, pease, and potatoes classed as vegetables, $756,000; together with fruits, flax, tobacco, provisions, and other products to the total value of nearly $23,000,000, a little more than half that the amount was in 1888.

During the same year the principal imports from the United States were: Coal to the value of $8,931,000; breadstuffs, $8,854,000; iron and steel products, $4,323,000; cotton goods, $4,060,000; wood and its manufactures, $2,740,000; provisions, $1,664,000; dairy products, $1,138,000; together with various manufactures, chemicals, drugs, india rubber goods, mineral oils, hides, skins, and fruits, to the total of $50,761,000.

[1] These facts are largely to be accounted for by the anomalous political status of the Dominion, which, though a British possession, is so in name only; yet the stimulus to business and political life, which independence of Great Britain would give to her, are lacking. In the course of the last decade there has been an increasing agitation in Canada, looking to separation from the mother country, to counteract the effects of which agitation, proposals for what is called "imperial federation," or the formation of more intimate relations between Great Britain and her English-speaking colonies, have been made and discussed. The Canadian people, however, are opposed to closer political relations with England, — in fact, the whole trend of opinion in the Dominion is in the opposite direction. Canada is every day becoming more American; imperial interference in colonial affairs is resented, and independence seems inevitable. Incorporation with the United States, while perhaps not to be achieved in our time, and in some respects of doubtful expediency, yet appears to be the manifest destiny of the country. The people of Nova Scotia, New Brunswick, and Manitoba are already ripe for any change which would open to them the market of the United States.

more than 2,000 miles of inland navigation through one of the most fertile sections of the continent. *Winnipeg*, the capital, is the most important city. It commands the traffic of the great wheat regions of the central plain, and ships wheat by rail, both eastward for trans-shipment at Montreal, and southward over the border into the United States.

Northwest Territory and **Athabasca** are situated between Manitoba and British Columbia. The former is largely unexplored, but is known to contain vast areas of arable land. It is estimated that the land in these divisions suited to wheat-growing aggregates an area five times that of the state of New York, and that other areas suitable to the cultivation of root-crops are nearly as extensive. Except upon the line of the Canadian Pacific railway, the growth of population, however, is extremely slow, owing mainly to the great distance from markets for products. The forest tracts embrace one of the greatest fur-producing districts in the world, and supply three-fourths of the furs sold in London and Leipsic. The mineral regions of this territory contain coal, gold, iron, and petroleum. The coal deposits found near some of the railway lines are being fast developed to supply the interior towns, particularly of Manitoba. The other mineral districts are remote from the railways.

Ontario has an irregular surface. In the northern part are forests and mines; while in the southern part, particularly in the peninsula between lakes Erie and Ontario, are rich farming-lands. The latter region is called the "Garden of Canada." Much attention is given to dairy products; and butter, cheese, and eggs are extensively exported to the United States and Great Britain. Ontario carries on much of the manufactures of the Dominion. *Ottawa* is the seat of the Dominion government. It is more an educational than an industrial centre, though in the immediate vicinity considerable manufacturing of wood is done. The more important commercial and industrial centres are *Hamilton* and *Toronto* on Lake Ontario, and *Kingston* at the junction of this lake with the St. Lawrence River. A great part of the trade between the Dominion and the United States is conducted through these ports.

Quebec has a hilly surface and a thin soil. Oats, potatoes, and hay are the principal crops, and maple-sugar is made in large quantities. The principal minerals are copper and iron. Ship-building and the fisheries are important, but lumbering is the leading pursuit. The great water route is the St. Lawrence River. The Grand Trunk Railway, with a branch to Portland, Maine, passes through the chief cities. In winter, owing to the closing of the St. Lawrence by ice, communication with the ocean is mainly through the United States. *Montreal*, the largest city in the Dominion, is situated on the St. Lawrence River at the head of ocean navigation; and though a thousand miles distant from the Atlantic, it controls much of the foreign commerce of the Dominion. It is connected by waterway or railway with the great producing centres. The chief exports are wheat, flour, lumber, and dairy products. Much of the flour for export is milled in the city. Other considerable industries are cloth-making and sugar-refining. It is the third city in importance

in the St. Lawrence valley, Chicago being first and Buffalo second. The city of *Quebec*, 150 miles nearer the sea than Montreal, has a large export trade in lumber, but its import trade is small.

New Brunswick has an undulating surface. Its fisheries of cod, mackerel, herring, salmon, and haddock are extensive, and, in value, rank next to those of Nova Scotia. But commercially its great wealth is in its forests, which furnish a large supply of lumber. The building of small wooden vessels for river and coast trade is a prominent industry. A considerable commerce is carried on with the United States and South America. The St. John River furnishes navigation for two hundred miles. *St. John*, the largest city, has a spacious harbor, and is the seat of a small foreign commerce. It is the centre of a growing cotton-manufacture. *Fredericton*, the capital, has an active trade with the interior.

Nova Scotia has many good harbors and a large commerce. The most important natural products are coal and iron. Great deposits of these minerals exist, but they are not fully developed. The fisheries provide the most valuable export. Of the sixty thousand men employed in the Dominion fisheries, one-third live in Nova Scotia. The fish, named in the order of their value, are cod, lobsters, herring, and mackerel. On the adjoining island of Cape Breton are rich deposits of coal, but fishing is the main industry of the people. *Halifax*, on one of the finest harbors in North America, has a considerable commerce. The chief export is fish. Other exports are lumber, agricultural and dairy products, and coal. The city has numerous industries, but it imports manufactured goods from the United States and England. Halifax is the only port of the Dominion open to commerce in winter. The completion of the railway connecting it with Quebec and Montreal has increased its trade.

Prince Edward Island is the smallest province of the Dominion. Fishing and lumbering are, next to agriculture, the leading occupations. The exports are cereals and dairy-products. *Charlottetown*, situated on a fine harbor, is the capital.

Newfoundland, to which the eastern part of Labrador is colonially attached, lies off the mouth of the St. Lawrence River. Its fixed population is very small, and its industries are practically limited to the off-shore fisheries, fish-curing, and the manufacture of cod-liver oil. The food-supply is almost wholly imported.[1] Copper deposits exist, but the mining product is small. *St. John's*, on the east coast, is a great fishing centre, and the headquarters of the Scotch Arctic whaling and sealing fleet.

THE BRITISH WEST INDIES. — The British West Indies comprise all the insular possessions of Great Britain situated between North America and South America. Old Providence, an island in the Gulf of Mexico, near the terminus of the Nicaragua canal, and British Honduras, are included among these possessions.

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[1] Newfoundland exported to the United States in 1894 fish to the value of $118,000; copper ore, $113,000; and other goods to the value of $535,000; and imported from the United States, breadstuffs, provisions, and manufactured goods, to the total value of $1,649,000.

The Bahamas are a group of 600 islands southeast from Florida and northeast from Cuba. Many of these islands are mere rocky peaks and uninhabitable, and only twenty of them are of any consequence commercially. These are generally level, of coral limestone formation, with sandy soil. *Nassau*, on the island of New Providence, is the capital. Other important islands of this group are San Salvador, Grand Bahama, Long Island, Harbor Island, Great Inagua, and the Andros Islands. The Bahamas profited by the American Revolution, many loyalists settling there after the colonies gained their independence. During the civil war in America, Nassau was the headquarters for blockade-runners, and was for a time a place of considerable importance.

The products of these islands, from the soil, consist of oranges, pineapples, tomatoes, mahogany, ebony, satinwood, and preserved fruits; from the sea, sponges, turtle-shells, and salt. Under the encouragement of the government the cultivation of sisal hemp, a fibre native to Yucatan, is increasing. Hitherto the exportation of sponges has been the leading source of income for the islands. A considerable profit is derived from American tourists, for many of whom these islands are a winter resort. There is direct steamship communication with New York. The population of about 50,000 is two-thirds black. San Salvador has borne the reputation of being the land first sighted by Columbus on his voyage of discovery in 1492.

Grenada, St. Vincent, and **St. Lucia** are the most important islands of the Windward group. Their combined population is 150,000, mostly negroes and coolies. Cocoa is the distinctive export; though sugar, rum, molasses, cotton, and coffee are also raised in larger quantities than home consumption demands. *Port Castries*, on St. Lucia, has one of the best harbors in the West Indies, and is fast growing in importance.

Trinidad, ten miles from the coast of Venezuela, at the mouth of the Orinoco River, is the most southerly of the islands of the West Indies. From the fortunate situation, the fertility of the soil, the varied products, and the evenness of the climate, the island has won the title of "the Pearl of the Antilles." *Port of Spain* is the capital and chief centre of commerce. The principal products are sugar, cocoa, molasses, rum, cocoanuts, timber, fruits, and asphalt, or mineral pitch. On the island is a remarkable asphalt lake, containing a vast supply of this material.

The Bermudas, a group of 360 islands, are situated six hundred miles due east of North Carolina. Only fifteen of them are habitable, and on these the soil is thin. The more important are Bermuda, St. Georges, Ireland, Somerset, and St. David's. There are no fresh-water streams, and the wells being poor, the water supply is dependent upon the fall of rain. *Hamilton*, the seat of government, is on Bermuda Island. *St. George*, on the island of the same name, has a fine harbor.

The trade of the Bermudas consists almost wholly of the export of garden vegetables to the United States. The chief income of the people is derived from the onion and potato crops. Owing to the mild and equable climate, the Bermuda Islands are a favorite winter resort for people living in the colder parts of the Atlantic states.

Barbadoes, the most easterly island of the West Indies, is about 250 miles northeast from Venezuela, and is said to be the most densely populated island in the world. The surface is irregular, but the soil is very productive. The forests have been cut away so that all the available land may be devoted to the one staple crop, — sugar. Even tropical fruits have disappeared to make room for sugar-planting, and the island is now dependent upon neighboring islands for its fruit supply. The consequence of this one-crop system has been ruin to the planters, and efforts are being made to vary the products by including tobacco, indigo, and arrowroot. Most of the sugar is exported to the United States. An adjunct of sugar-raising is the manufacture of rum and molasses. *Bridgetown,* the seat of government, has a population of 20,000, and is a very important commercial port. It is a station of the West Indies and Panama Telegraph Company, the headquarters of steamship lines to Europe and to the United States, and a port of call for merchant ships in general. It is also the headquarters of the British forces in the West Indies. The population of Barbadoes Island is 175,000, about one-tenth of whom are whites.

Jamaica, the largest and perhaps the most valuable British possession in the West Indies, is in the Caribbean Sea, 100 miles south of Cuba. The centre of the island is high and mountainous, so that many streams descend to the coast. The soil is rich and very productive. Most of the staple tropical products are raised. Among the exports are sugar, molasses, rum, fruits, coffee, and dyestuffs. The population of the island is over half a million, of which three-fourths are negroes. Many Chinese and coolies are employed on the plantations. Though situated five hundred miles from Jamaica, Turk's Island and the neighboring island of Caicos are colonially attached to the former. The only export worthy of mention from these small islands is salt. *Kingston* is the capital.

The Caribbean Sea is separated on the east from the Atlantic Ocean by many small islands called the Lesser Antilles. The northern group is called the Leeward, while the southern is known as the Windward Islands.

Antigua is the most important of the Leeward Islands. *St. John's,* the chief town of Antigua, has a population of about 10,000. The products of these islands are principally sugar, molasses, rum, and cotton.

British Honduras, or **Balize,** is situated on the shores of the Caribbean Sea, between Yucatan and Guatemala. The country is not developed, and the population is sparse. The chief occupation of the people is cutting and exporting timber, — chiefly cedar, mahogany, and rosewood. Tropical fruits are also exported.[1]

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[1] In 1894 the British West Indies exported to the United States: Sugar, $7,041,000; bananas, $1,801,000; coffee, $1,343,000; cocoa and cocoa products, $976,000; spices, dyewoods, fruits and nuts, asphaltum, sponges, etc., to the total value of $13,000,000.

The imports into the British West Indies from the United States in 1894 were: Breadstuffs, $2,955,000; beef, pork, and meat products, $1,644,000; lumber, $802,000; dairy products, $277,000; kerosene and other oils, $196,000; oil cake and meal, $193,000; leather goods, $131,000; live animals, $120,000; together with a great variety of manufactured articles, to the total value of $8,500,000.

BRITISH SOUTH AMERICAN POSSESSIONS. — The South American possessions of Great Britain consist of British Guiana, and a few islands in the South Atlantic.

British Guiana includes the three settlements of Demerara, Essequibo, and Berbice, named from the principal rivers. The boundary between the colony and Venezuela is unsettled. The area is about equal to that of Colorado, the population sparse, and the climate unhealthful. The cultivated part of the country is situated along the seacoast and a short distance up the rivers. The chief product is sugar, of which the variety known as Demerara crystal is the finest in the world. Cotton of excellent quality, but in small quantity, is grown. Cocoanuts, coffee, rum, molasses, and butter are also produced and exported. *Georgetown* is the capital and port.

About 250 miles east of the southern extremity of South America are the **Falkland Islands.** The colony is a grazing settlement, and whaling and sealing station. *Stanley*, the only harbor, is often visited for repairs and supplies by vessels that have made the passage of the Straits of Magellan. The only important exports are wool, mutton, and beef.

QUESTIONS

What provinces compose the Dominion of Canada? What British colony forms a geographical, though not a political, part of the Dominion? Compare Canada with the United States in area and in population. How does Canadian export of lumber compare with that of the United States? What can you say of the Canadian coal deposits? — of its fisheries? — agriculture? — trade routes? — manufactures? What great movement of population is taking place?

What can you say of the surface of British Columbia? — of its products? Name the capital. What great trade route has its western terminus on Vancouver Island? Name the leading exports of Victoria.

Where is Manitoba? What is its chief product? What can you say of its waterways? — of its railways? What is the capital? What is its principal shipment?

What is the situation of Northwest Territory? Give some account of its natural advantages for production. Why are not these more fully developed? What is the leading commercial product at the present time?

Compare the northern part of the province of Ontario with the southern. What products does Ontario extensively export? What can you say of its manufactures? What city of Ontario is the capital of the Dominion? What manufactures are most important in or near Ottawa? Name other industrial and commercial centres of this province.

Name the chief agricultural products of the province of Quebec, — the mineral products. What is the leading pursuit? What great trunk line of railway connects the leading cities of this province? What American city is a winter terminus of the Grand Trunk Railway? Locate and describe Montreal. What are its main exports? — its industries? Where is Quebec? What can you say of its trade?

Give some account of the fisheries of New Brunswick. In what does the commercial wealth of this province consist? Name and locate the principal city, — the capital.

What are the most important natural products of Nova Scotia? What is the leading export? What mineral deposits exist on Cape Breton? What is the exports of Halifax?

What are the exports of Prince Edward Island? What occupations other than agriculture are considerably followed? What can you say of the population of Newfoundland? What important place on the east coast?

Describe the Bahama Islands. What and where is the capital? What are the principal products of the soil? — of the surrounding

waters? What has been the leading export? What communication is there with New York?

Where are the Bermudas? Which are the more important islands of this group? Name the leading towns. With what country is nearly all the export trade of the Bermudas carried on? Of what does this trade consist?

Locate and describe the island of Barbadoes. What is the staple crop? What has been the result of the exclusive cultivation of sugar-cane? What country receives most of the export of sugar? What other industries are followed? Name and describe the colonial capital.

Where is the island of Jamaica? What can you say of its soil? — of its productions? — of its exports? Of what nationalities is the laboring class? What islands are colonially attached to Jamaica? What is the leading export of Turk's Island?

Which is the most important of the Leeward Islands? What are the chief products of this group? What are the principal Windward Islands? What is the main export? What growing port upon St. Lucia Island?

What is the situation of Trinidad? Name some of its natural advantages for production and trade. What is the capital? What are the more important products? What is said of the island of Tobago? Where is British Honduras? What are the principal exports? Name the principal settlements of British Guiana. What are its exports? Which of these is especially noteworthy? Locate and describe the Falkland Islands. What are the exports?

VII. BRITISH POSSESSIONS IN AFRICA. — The southern part of the continent of Africa contains several colonial dependencies of Great Britain having an aggregate area about equal to that of the German Empire, and a population of nearly 3,000,000. This territory was largely peopled by Dutch immigrants, and their descendants now form an important part of the inhabitants of European blood. The coast-line is deficient in natural harbors, and large sums are annually expended in improvements. Land naturally arable forms the lesser portion of the area of these colonies; but under government encouragement irrigation has been extensively resorted to, and considerable land has been thereby reclaimed. The wealth of this territory is, and must continue to be, largely in grazing and mining, and their allied industries and resulting trade.

Cape Colony, the most important of these British dependencies, lies to the south of the Orange River. The chief products are diamonds, wool, ostrich feathers, copper, hides, maize, wheat, and tobacco. A large part of the export of wool and Angora hair is raised in territory outside, and to the north of the colony.

The population of Cape Colony is about one million. *Cape Town*, the capital, has the best harbor, and is the centre of trade and manufactures. *Port Elizabeth* is an important seaport. From the islands on the west coast guano is increasingly derived, the Peruvian deposits, long so important to commerce, being nearly exhausted.

Natal, on the east coast, has a population of half a million. It has extensive grazing-lands, and there are rich coal deposits at *New Castle* in the north. The exports are wool, sugar, maize, hides, ivory, and ostrich feathers. *Durban* is the capital. A submarine cable along the coast connects South Africa with Europe.

Mauritius, an important though small island, lies about 500 miles to the east of Madagascar. Its area is a little greater than that of Long Island, N.Y., and it has a population equal to that of Rhode Island. The laboring-class is composed of coolies, who work on the sugar plantations. Sugar is the staple product and the

principal export. It is sent mainly to India, Australia, England, and the United States; the annual value of the export is about $800,000. Hemp, drugs, and caoutchouc are the other important exports.

Gambia, Sierra Leone, and **Lagos** are small British colonies on the west coast. Much of the trade centres at *Freetown* the capital of Sierra Leone. The principal exports are palm-nuts and palm-oil; but there is considerable trade in hides, rubber, ivory, cotton, and gums. The commerce of these colonies with the United States is of considerable importance; our exportation to them consisting of agricultural implements, petroleum, and minor wares. The climate is unhealthful.

Lower Egypt is nominally a dependency of the Ottoman Empire. Practically, however, since the completion of the Suez canal, it has been a British protectorate. The canal was constructed and opened to traffic by French capitalists. But owing to the importance of her colonial interests in India, the control of this highway was of vital importance to Great Britain, and in 1875 a leading interest was purchased from the Khedive of Egypt by the British government. England is now taking much the same part in supporting the Khedive as that which has characterized her East Indian diplomacy, where the petty hereditary princes are put upon the British pension-list as the price of their subserviency to the interests of Great Britain.

Port Said, at the Mediterranean end of the canal, brought into existence by the construction of this work, has become a large centre for trade. It is not improbable that in time Port Saïd will be Egypt's chief commercial city. Raw cotton, to the annual value of about $40,000,000, is the chief export of Egypt. It is sent mainly to Great Britain, Russia, and France. The leading imports are cotton manufactures and coal from Great Britain. At present the bulk of foreign commerce is concentrated at *Alexandria,* at the northwestern extremity of the Nile delta. Other ports are *Damietta* and *Rosetta. Suez* is an important port at the head of the Red Sea.

A wide belt of territory, including the more fertile part of the region known as Soudan, is claimed by Great Britain. This territory extends from the junction of the Niger and Benne Rivers to the Zanzibar coast. A narrow strip bordering the Gulf of Aden also belongs to British African possessions.

QUESTIONS

Give some account of the area, physical characteristics, and natural wealth of the British possessions in South Africa. Where is Cape Colony? What are its principal products? In what city are most of the manufactures?

Where is Natal? What mineral deposits in the colony? What are the leading exports? Describe Mauritius. What is the leading product and export? Whither is it sent? What other exports can you name? What British Colonies on the west coast of Africa? What is the principal port? What are the most important exports? What other exports can you name? What can you say of our own trade with these colonies?

What is the political status of lower Egypt and the region of the Nile delta? What special cause has brought about this condition? By what power is the Suez canal virtually controlled? Where is Port Saïd? What is said of its commerce? What is the principal Egyptian export? What are the principal imports? With what nation is this trade chiefly carried on? What is Egypt's chief seaport? What other ports are important? What two ports are the termini of the Suez canal?

CHAPTER XV.

OTHER COUNTRIES OF EUROPE

I. THE EMPIRE OF RUSSIA. — The Russian Empire consists of Russia and Siberia. The former is in Europe, the latter in Asia.

Russia comprises about three-fifths of the area of Europe, and has a population of 100,000,000. Its short coast-line is low and flat. The central part is a plateau about one thousand feet above the sea-level, and from it the land slopes gradually toward the White and Baltic seas in the north, and the Caspian and Black seas in the south. The sluggish rivers are generally navigable, furnishing, in connection with the canals, so vast a system of internal communication that the building of railways has not pressed itself as a necessity upon the government.

Though a great portion of the area is unfit for cultivation, Russia is nevertheless pre-eminently an agricultural country. In the extreme north the climate is rigorous; the southeast is an arid region, and the interior is an almost unbroken forest. The western part of the empire, between the Baltic Sea on the north and the Black Sea on the south, is fertile, and produces abundant crops. Cereals can be grown here more cheaply than in other parts of Europe, and this region is the granary of the continent. The wheat crop is yearly increasing in amount, and is a strong competitor in the European market against that of the United States. Flax and hemp are extensively cultivated. Fish are abundant in the rivers and in the Caspian Sea, sturgeon being the chief export of this industry.

The mineral products include gold, silver, lead, platinum, copper, iron, coal, rock-salt, and petroleum. Mining is in a low state of development, owing to lack of improved methods, remoteness of deposits, and poor transportation facilities; but the petroleum fields on the west shore of the Caspian Sea are worked with much energy. Heretofore they have been difficult of access; but a railway has been built to connect the fields with Batum and Poti on the Black Sea, and a pipe-line is now in course of construction. The petroleum produced in these fields is greater in amount than that mined in the United States, and when refined has higher illuminating power.

Though mainly a producer of raw materials, Russia has also considerable manufactures. The more important of these are cotton and linen goods, leather, and furs. In the tanning of "Russia" leather great perfection has been attained, but the product is now closely imitated in other countries. In making sheet-iron the Russians are unexcelled.

St. Petersburg, the capital, with a population of nearly a million, is situated on the Neva River at the head of the Gulf of Finland. Formerly Kronstadt, the

grains, flax, and hops. Potatoes, cereals, and beet-sugar are exported, the government encouraging the latter industry by a system of bounties. The agricultural products are not adequate to the support of the population; less than half the people depending directly upon the soil. Vine culture is extensively pursued in the Rhine valley. Grazing is confined to a few districts, — cattle-raising to the Jutland peninsula, sheep-raising to the northern and central parts, and horse-breeding to the eastern part. But these interests are not equal to the demands, and animals and animal products are imported.

Fruit and forest trees cover nearly a quarter of the empire, the latter being a source of large income. Forestry is a science to which the Germans give great attention. As a rule, the mountainous regions in the southern part of the empire are well wooded; the more common trees are the fir, pine, birch, larch, oak, and beech. In the southwestern part of the empire is the famous Black Forest, composed chiefly of pines. From this and other forest regions quantities of lumber are floated down the Rhine for export.[1]

The mountainous regions are rich in minerals, coal and iron being found in great abundance. Iron usually occurs in the same localities as coal, thus fixing the sites of the great metal-working centres. Germany produces more silver than any other country of Europe. Zinc, tin, lead, and salt are extensively mined.

Of late years manufacturing interests have increased with great rapidity, and Germany now stands third as an iron and steel producing nation, the United States being first and Great Britain second. Cotton, linen, woollen, and silk textile fabrics are woven in great variety, the exports being chiefly cloth and hosiery. Other manufactured products are glass, porcelain, paper, aniline dyes, leather goods, and wooden ware. Much of the manufacturing is done in the smaller towns. Large cities are numerous, however, and most of them are noted for some important industry.

Berlin, the capital of the empire, is situated in the centre of the great northern plain. It has a population of 1,500,000, and, next to Paris, is the most populous city on the continent. The railway and canal systems of the country radiate from Berlin, and it is thus an important inland commercial centre. It has large textile-factories and machine-shops; and the stock-exchange is the most important on the continent. There is direct railway communication with all parts of the empire and with Russia, Austria-Hungary, France, and Switzerland.

Bremen was formerly one of the great commercial cities of the world; but its harbor is now too shallow for deep-sea vessels, and trade is carried on through **Bremerhaven,** situated a few miles below, at the mouth of the Weser. The city is in direct steamship communication with Great Britain, the United States, South

[1] Huge rafts of logs are floated down the Rhine every year, each formed of several smaller ones, which have come by mountain streams from the Black Forest. Layers of pine logs are placed one upon another, and over all is laid a rough deck. Upon this are erected cabins enough to accommodate, in some cases, as many as four hundred persons, as the raftsmen usually take their families with them. Live-stock is also put on board, and the whole constitutes a floating village. The Netherlands is the destination of these rafts.

America, and other important commercial countries. Much of the raw material collected by the ships of Bremen is manufactured in that city. It is a great tobacco-market; rice-shelling and sugar-refining are important industries. Considerable ship-building is also carried on.

Hamburg, situated on the Elbe sixty miles from the sea, is accessible to all classes of vessels. It came into importance about the time of the decline of Venice and other Italian commercial cities. At the present day it is not only the most important port of Germany, but it is also the chief commercial city of the continent of Europe. The lower part of the city is traversed by numerous small canals, which greatly aid commerce. Vast docks and basins have been built, and in other ways engineering skill has made a fine harbor out of one naturally indifferent. The commerce of the port is greater than that of all the ports of The Netherlands, or those of Belgium. It is most extensive with Great Britain, the United States, the Argentine Republic, and the East and the West Indies. The industries of Hamburg are considerable, not only in the manufacture of raw products, but in ship-building, brewing, and metal-working.

Dusseldorf, on the Rhine, is the centre of a great manufacturing region. Fabrics of cotton and silk are extensively made. Iron and coal are abundant, and **Essen,** the seat of the great Krupp steel-works, is near by.[1]

Cologne, a few miles farther down the Rhine, is an important distributing point. It has large sugar-refineries and cotton-mills. The famous perfume to which the city has given its name was first manufactured here, and it is still a great industrial product.

Frankfort, situated on the Main, a large tributary of the Rhine, is the centre of the trade of southwestern Germany, and one of the chief money-markets of Europe.

Dresden, on the Elbe, has numerous industries. Its china and porcelain ware rank with the finest made.

Leipzig, a few miles west of Dresden, is the chief centre of the printing and publishing trade of the continent. It is also celebrated for its manufacture of leather products and furs.

Chemnitz, a few miles southwest of Dresden, is one of the largest cotton-weaving centres in Europe.

One-third of the commerce of the German empire is carried on with the adjoining nations. The merchant-marine has been encouraged by government, with

[1] Essen owes much of its prosperity to the great coal-mines in its vicinity, but is best known as the industrial colony of Krupp & Co., who supply artillery to the great powers. Cast-steel goods of every description are here manufactured.

II. THE REPUBLIC OF SWITZERLAND. — Switzerland occupies the mountainous region lying between Germany, Austria-Hungary, Italy, and France. The area, 16,000 square miles, is about twice that of the state of Massachusetts; the population is 3,000,000. The greater part of the population is engaged in agriculture and cattle-raising, and the leading products of these industries are cheese and condensed milk. In 1887 the export of cheese amounted over 20,000 tons.

Considering the natural disadvantages under which they labor, especially the absence of any considerable deposits of coal and iron, the Swiss have achieved a high rank among manufacturing peoples. The nature of the surface of the country has provided abundant water-power, which somewhat compensates for the lack of coal; but a large part of the manufactured wares of Switzerland is literally hand-made. The best-known products are clocks and watches, and carved woods.

Nearly all raw materials are imported, and the bulk of exports consists of manufactured goods. In a general way it may be said that Switzerland buys cereals, and raw cotton and silk, and sells clocks and watches, silk and cotton goods, and cheese and condensed milk. The United States imports from Switzerland clocks and watches, laces and embroideries, silk goods and silk; and exports to Switzerland a variety of goods of much less value.[1] Silk manufactures were greatly stimulated by the opening of the St. Gothard tunnel through the Alps, thus permitting the direct importation of raw silk from Italy. The greater part of the trade of Switzerland is conducted with the four nations whose borders enclose it, but considerable commerce is carried on with other countries, especially with Great Britain. The Swiss derive a large revenue from tourists, who, to the estimated number of a million annually, visit the mountains and lakes of Switzerland.

Geneva is the centre of the watch- and clock-making industry, the work being done in the surrounding villages. **Zurich** is the chief educational centre and largest city. Most of the cotton and silk goods are manufactured here. The city also carries on a large in-transit trade; *i.e.*, goods destined for other points pass through the city and yield a revenue from re-shipment.

III. THE EMPIRE OF TURKEY. — Turkey in Europe occupies a large part of the Balkan peninsula. The soil is generally fertile; but agriculture is carried on in a primitive way, and only a part of the productiveness of the soil is utilized. Fruits are extensively grown, and raisins form the largest item of export. Wheat, cotton, and tobacco are other important cultivated crops. On the slopes of the Balkan Mountains are great fields of roses from which attar of roses is produced. Grazing

[1] In 1894 Switzerland exported to the United States: Laces and embroideries to the value of $3,758,000; silk and silk goods, $3,832,000; watches, $940,000; cheese, $619,000; cotton goods, $563,000; hats, bonnets, and material, $279,000; together with jewels and jewelry, musical instruments, colors and dyes, leather and leather goods, woollens, etc., to the total value of $11,450,000.

The same year the imports from the United States, credited mostly to the ports through which they passed in transit, amounted to only a little more than $17,000.

is followed in some sections, and wool is exported. Iron, lead, silver, copper, sulphur, salt, and coal are mined, but in small quantities.

Carpets and rugs are the only manufactures for which the Turks are famous, and even in these goods the looms of western nations are fast becoming active competitors. The making of "Turkish" towelling, formerly a great industry, is now mainly in the hands of the English.

Constantinople, the capital, the greatest commercial city of eastern Europe, is connected with the west by railway. It carries on trade with nearly all the nations of the world, being greatly favored by its excellent geographical situation. There is also a large caravan trade with western and central Asia; though the caravans now bring mohair, silk, and opium, rather than manufactured products, as was formerly the case. The commerce of the Ottoman empire is in the hands of Greeks, Hebrews, and other foreigners.

Our own trade with Turkey is very small; we import wool, mohair, and oils, returning a small value in kerosene.[1]

Turkey in Asia, known as Asia Minor, or "The Levant," is a high plateau, in the south of which are river-valleys yielding tropical products. The interior is a hilly, grazing country from which Angora and other kinds of wool are exported.

Smyrna, the chief commercial city, possesses a fine harbor, in which vessels of nearly all commercial nations trade. Direct steamship communication is held with various ports of Europe. The caravan routes that terminate at Smyrna have been used for centuries, and over them a great trade is carried on with inland Asia.

The city is purely commercial; and most of the products of the Levant, including fruits, opium, cotton, sponges, oil, and drugs, pass through its warehouses. The only manufactured products of Asia Minor are rugs and carpets. Though called "Smyrna" rugs and "Smyrna" carpets, these goods are made in the interior, and are merely sent to market by way of that city. Imitations of these rugs and carpets are made by machinery in Philadelphia.

Damascus is still the starting-point for many caravans north, east, and south; but most of the foreign trade passes through the neighboring city of Beyrout. The two cities are connected by a fine railway. **Beyrout** is noted for its textile manufactures, which, with a considerable commerce, place it next to Smyrna in trade importance. **Angora,** in the interior, is the shipping-point of the wool of the Angora goat, commonly known as mohair. The trade is very valuable. Most of

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[1] In 1894 European Turkey exported to the United States: Opium to the value of $614,000; wool, raw and manufactured, $541,000; oils, $159,000; together with hides, gum, tobacco, silk, etc., to the total value of $1,657,000.

The imports into Turkey from the United States were $85,000 in value the same year.

is the most valuable export. Owing to diseases of the vine the product of wine has greatly fallen off, and France now imports wine from Spain and Italy.

The mineral resources of France are comparatively small. In the northeast, on the southern slope of the Ardennes Mountains, are coal and iron mines. Coal and iron are also mined in the southeast. The coal supply of the country is not equal to the demand, and it is largely imported. Lead, the only other mineral mined to any extent, is found in the central plateau.

Although more than half the people of France are dependent on the soil, yet the manufactures of the republic are of greater commercial value than all other products. The great manufacturing centres are in the region of the coal deposits, and produce not only iron goods, but textile fabrics of all kinds, — chiefly cotton, linen, and woollen in the northeast, and silk in the south.

The fisheries are of great value, and give employment to 150,000 men. The lakes and rivers are generally well stocked. On the coast, oyster-culture has become an industry of much value, and sardines are caught in great numbers. Deep-water fishing is carried on to a larger extent than by almost any other continental nation, French vessels being found on the Iceland, Newfoundland, and other cod banks.

Fruit and forest trees cover about a fifth of the area. Among the fruits grown are olives, apples, pears, citrons, figs, and plums. The principal nuts are almonds, chestnuts, and walnuts. The forests consist chiefly of oak, birch, pine, beech, elm, and chestnut. The largest forest areas are in the northeast, southeast, and southwest. In the south, the cork-tree is carefully cultivated. Wood forms the chief domestic fuel of France.

Grazing is extensively carried on in nearly all parts of the republic, but the animals as a whole are inferior in quality. In the northern part oxen are employed for field-labor, while in the south mules and donkeys are chiefly used. The rearing of cattle, sheep, and goats receives considerable attention; and among the lesser industries are bee- and poultry-culture. The breeding of horses is not carried on so extensively as in other European countries. The percheron of Normandy, however, a draught-horse of great strength and endurance, is a famous breed, and is largely exported to the United States.

Paris, the capital of France, has a population of 2,450,000. It is the largest city on the continent of Europe, and, next to London, the largest in the world. The canal and railway systems of France converge here, and nearly the whole country pays tribute to the city. It is the commercial and political centre of the republic, and the fashion centre of the world. The Bourse, or Stock Exchange, is excelled by those at London and Berlin only. Paris is an important industrial centre in fine artistic work, such as jewelry, metal-work, leather goods, artificial flowers, millinery goods, porcelain, and fine pottery. The River Seine, on which the city is situated, had formerly a natural depth of only two feet, but engineering skill has increased this to ten feet.

Havre is the port through which the ocean traffic of Paris passes. It is situated at the mouth of the Seine, and is the second city in importance in France. It carries on a large traffic with all parts of the world, but more particularly with Great Britain and the United States. It imports the raw materials and food-

products for the manufacturing districts of the north, and exports manufactured goods. Outside of Great Britain, it is one of the greatest ship-building ports in the world, and its fishing interests are extensive. Among the various industries are sugar-refining, tobacco-manufacture, and iron-working.

Rouen is situated on the Seine, seventy-five miles above Havre, and is accessible to vessels of large size. It is the centre of a great cotton-manufacturing region.

Marseilles, on the Mediterranean coast, carries on a large traffic with Havre; but the greater part of its trade is with other Mediterranean ports, with China, Japan, and India. The commerce of the city has been greatly benefited by the completion of the Suez canal. Marseilles is an important industrial centre. Soap-making is an important industry, and there are oil and chemical factories, metal-works, and ship-yards.

Bordeaux, on the River Garonne, is the chief wine-market of France. It is the third city in commercial importance; but its harbor is so shallow that ocean traffic is carried on mainly through Pauillac, which is nearer the sea, and has a fine harbor. In addition to the wine business, Bordeaux has considerable other trade with Great Britain, the United States, and South America. Ship-building is next to the wine industry in importance.

Lyons, situated on the Rhone, one hundred and fifty miles from the Mediterranean, is the largest silk-manufacturing city in the world. Although great quantities of raw silk are produced in the Rhone valley, yet the supply is not equal to the demand, and Italy and China are depended upon to supply the deficit. Velvet, ribbon, cloth, and other products of silk, are manufactured throughout this region, and exported from Paris both by way of Marseilles and of Havre.

The skill of the French in spinning and weaving has extended to cotton, woollen, and linen fabrics. These goods are manufactured chiefly in the north and northeast, and in value the woollen goods exported exceed those of silk. Lace-making is one of the most characteristic French industries, **Alençons** and **Valenciennes** having each given its name to choice qualities. **Lisle,** near the Belgian border, is one of the largest linen-manufacturing centres of Europe, and fine grades of goods are known by the name of the city.

The Island of **Corsica** is politically a part of France, but is of little or no commercial importance.

FRENCH COLONIES AND POSSESSIONS. — France has colonial dependencies in all parts of the world, — a few of importance, and many that are relatively insignificant. Madagascar, Tahiti, and Tunis are protectorates of France; Algeria is a province rather than a colony; New Caledonia and French Guiana are penal settlements; Anam and Cambodia are important parts of newly acquired territory in Indo-China. The Marquesas Islands, the Society Islands, Reunion Island, Guadaloupe and Martinique in the West Indies, and the fishing-islands of Miquelon and St. Pierre off the coast of Newfoundland, are minor colonies.

come from Germany, England, and Sweden; and nearly all of the exports go to these countries, live-stock and dairy products forming the greater part.[1]

Copenhagen, the capital, has an excellent harbor. It is the chief commercial city and largest industrial centre of the kingdom.

The colonial dependencies of Denmark are **Greenland** and **Iceland,** and the islands of **St. Croix, St. Thomas,** and **St John,** in the West Indies. None of them is of much commercial consequence. Greenland exports cryolite, — a mineral used in making soap-soda, — alum and cryolite glass, skins and whale-oil; Iceland exports eider-down, Iceland moss, stock-fish, and sulphur; the Danish West Indies export sugar and molasses.

VII. AUSTRIA-HUNGARY. — This empire is situated in the east-central part of Europe. The area, 260,000 square miles, is about equal to that of the state of Texas; and the population, 37,000,000, is about equal to that of France. The emperor of Austria is also king of Hungary. More than half the area is mountainous. In the northeastern part are the plains of Hungary, forming about a third of the area: here cereals are grown in abundance. An equal area is forest-covered; and oak, pine, and beech lumber form a considerable export. The other more important exports are cereals and beet-sugar. Vine-culture and fruit-raising, especially of prunes, are extensively carried on in the high country. Generally speaking, the eastern part of the empire is devoted to agriculture, while in the western part manufacturing interests predominate. Rich deposits of iron and coal in the northwest have greatly stimulated industry. Both minerals are exported; and the chief industries are button-manufacture, iron-manufacture, linen, cotton, wool, and jute spinning, glass and paper making, and sugar-refining. With respect to mineral resources, the country is perhaps the richest in Europe, yielding gold, silver, salt, and petroleum. The Danube River, with its tributaries, drains nearly all the country; and, as the more important of these tributaries are navigable for small vessels, they form valuable highways of commerce. In connection with them is an efficient railway system, in part owned or operated by the government. The railways provide close intercourse with neighboring nations, especially with Germany.

Austria has a small coast on the Adriatic Sea; but there are only two ports of any importance, — **Trieste** and **Fiume.** These ports have considerable commerce; that of the latter is increasing, since it affords an outlet for the cereals and timber of Hungary. More than half the trade of the empire is by railway with Germany.

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[1] In 1894 Denmark exported to the United States: Paper-stock to the value of $16,000; oils, $12,000; works of art, $5,000; together with vegetables, wool, books, maps, and engravings, etc., to the total value of $194,000.

The imports into Denmark from the United States the same year were: Corn, $1,500,000; beef and pork products, $1,194,000; wheat and wheat flour, $835,000; refined oils, $309,000; oil cake and meal, $263,000; butter, $112,000; fertilizers, $111,000; together with seeds, iron and steel products, leather, cotton, molasses, tobacco, and other products, to the total value of $5,046,000.

Vienna, the capital of the empire, with a population about equal to that of New York City, is the most important city of Austria. It is situated on the Danube, at the head of navigation, and thus controls a large water-traffic. It is a great railway and industrial centre; the chief manufactures are of silks, machinery, and beer.

Prague is the commercial centre of Bohemian industries. These are woollen and hardware manufactures, and glass-making, for which latter industry the Bohemians have long been famous.

The twin city of **Buda-Pesth** — Buda being on the west bank, and Pesth on the east bank of the Danube — is the capital of Hungary. It is the centre of Hungarian commerce, and has many flour-mills. Most of the grain, cattle, and wine trade of the kingdom centres here.

The United States imports from Austria-Hungary buttons, fruits, drugs, and glassware. The exports of the United States to this country are of little value.[1]

VIII. PORTUGAL. — Portugal lies west of Spain, and borders on the Atlantic Ocean. Its surface characteristics and its productions are similar to those of Spain. The area, 34,000 square miles, is about equal to that of the state of Maine; and the population, 4,700,000, closely corresponds with that of Sweden, or of Canada. The people are dependent chiefly upon agriculture, and wine is the most valuable product. Fruits are next in value; and this product includes oranges, lemons, citron, figs, and olives. Fishing is an important industry, and sardines and herring are a considerable export. Minerals are found in variety, and some copper is exported. Manufactures are not very important: they consist in the main of fabrics of cotton, silk, and wool, besides pottery, and leather goods, chiefly gloves. Speaking generally, Portugal buys food-products and raw textiles, and sells cork, silk, and wine.[2]

Lisbon, the capital, at the mouth of the Tagus, is the chief commercial city. **Oporto,** the only other seaport of note, is famous for its "port" wine. The last-named city has some manufactures of textiles. The Portuguese colonial dependencies in Asia and Africa are of great prospective importance. In Africa are the **Cape Verde Islands,** on which St. Vincent is a fine coaling-station; the **Madeira Islands,** celebrated for their wine, and a resort for tourists; the **Azores,** which export

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[1] In 1894 the exports from Austria-Hungary to the United States were: Sugar to the value of $1,412,000; glassware, $720,000; stone and china ware, $564,000; flax, hemp, and jute, $519,000; wood and its manufactures, $328,000; vegetables, $310,000; together with drugs and chemicals, fruits, jewelry and jewels, leather goods, silk goods, and other products, to the total value of $6,896,000.

The imports into the empire that year from the United States were: Cotton seed and other oils, $216,000; rosin, $70,000; together with cotton, turpentine, and other products, to the total value of $526,000.

[2] In 1894 Portugal exported to the United States: Cork, $818,000; rubber, $808,000; wines, $123,000; drugs and chemicals, $67,000; together with fish, iron and steel manufactures, salt, and other products, to the total value of $2,030,000.

During the same year the imports from the United States were: Breadstuffs, $4,124,000; lumber, $320,000; cotton and its products, $284,000; oils, $243,000; together with tobacco, rosin, iron and steel products, jute goods, clocks, and other articles, to the total value of $5,194,000.

CHAPTER VI.

THE KINGDOM OF SPAIN

UNTIL the Spanish-American war, our commerce with Spain and the various Spanish dependencies gave to that nation the next place after France in the value of the commercial exchanges with the United States. Our imports from Spain formerly consisted largely of raisins, fruits and nuts, wine, and iron ore. From the Philippine Islands we get sugar and hemp; from Cuba, sugar, tobacco, and cigars; and from Porto Rico, sugar and molasses.

We send to Spain, cotton, petroleum, tobacco, and wheat. To Cuba and Porto Rico we ship lumber, flour, iron and steel goods, and meat products. Three-fifths of the commerce of Spain is with France and Great Britain.

The Spanish-American war of 1898 will inevitably change the commercial relations of Spain, lessening her trade with the United States and with her former colonies, so that her rank among the trading nations will, without doubt, drop behind that of Brazil, Belgium, and Italy.

Spain is situated on the Iberian peninsula at the southwestern extremity of Europe. Five-sixths of this peninsula are Spanish territory, the remainder being occupied by the kingdom of Portugal. The area of Spain, 193,000 square miles, is about twice that of Oregon; and its population, 17,000,000, is about half that of France. The surface is an elevated, mountainous plateau, so rugged in the interior as to be unfavorable to internal communication. As a consequence, the population is settled chiefly along the coast. Some parts of the interior are arid, and better fitted for grazing than for tilling; but the soil, as a whole, is fertile. This is particularly true in the south, where irrigation is resorted to. The river valleys are numerous and fertile, but none of the rivers is navigable. The country is too mountainous

[1] In 1894 Spain exported to the United States fruits and nuts to the value of $1,974,000; wines, $603,000; drugs, chemicals, dyes, $355,000; cork uncut, $113,000; iron ore, $101,000; together with lead, salt, tobacco, and other products, to the total value of $4,255,000. During the same year the imports into Spain from the United States were: Cotton, $8,985,000; tobacco, $1,634,000; breadstuffs, $1,140,000; together with lumber, iron and steel goods, lard, and other products, to the total value of $13,114,000.

The exports of Cuba to the United States in 1894 were chiefly sugar to the value of $63,147,000; tobacco, $7,880,000; bananas, $1,277,000; molasses, $1,148,000. The imports of Cuba from the United States during the same year were: Iron and steel goods, $4,696,000; lard, $3,625,000; flour, $2,473,000; lumber, $1,700,000; other meal products, $1,283,000; breadstuffs other than flour, $696,000; together with coals, oils, vegetables, and other products, to the total value of over $20,000,000.

The exports of the Philippine Islands in 1894 were chiefly sugar to the value of $3,655,000; manila and other textile grasses, $3,324,000. The imports of these islands in the same year were to the value of $145,000, principally cotton goods and kerosene.

The exports from Porto Rico to the United States in 1894 were: Sugar to the value of $2,294,000; with molasses, coffee, cocoa, nuts, etc., to the total value of $3,127,000.

The imports of Porto Rico from the United States during the same year were: Flour, $734,000; meat and dairy products, $893,000; together with lumber, manufactures of wood, iron and steel goods, cotton goods, and other articles, to the total value of $2,720,000.

for a complete canal system, and the traffic that exists is dependent upon wagon-roads and railways.

Agricultural pursuits are followed by three-quarters of the people. Cereals are raised in the north, and fruits in the south. The hillsides are generally covered with vineyards, and wine-making is the principal industry of the country. Wine forms two-fifths of the total exports. The only other agricultural products exported are fruits, chiefly oranges, raisins, grapes, olives, lemons, pomegranates, dates, and almonds. Hemp and flax of fine quality are raised in considerable quantity. Grazing is an important industry. Cattle, swine, and goats are reared; but the raising of mules, asses, and sheep yields much greater profit. Wool is considerably exported, and silk-culture is a thriving industry. The cork-oak is cultivated in the northeast, near the Mediterranean coast.

Spain possesses very rich deposits of various minerals, chiefly of iron, copper, lead, and quicksilver; but the copper and lead deposits are not well developed. Iron is the most important product of the mines. It is found in several sections, but the principal deposits are in the Basque provinces in the north. More iron ore is shipped from Bilbao than from any other port on the continent of Europe. The quality of this ore is excellent. Lead, copper, and quicksilver occur chiefly in the south. With the exception of those at New Almaden, in California, the town of Almaden has the most important quicksilver mines in the world.[1]

Industrially Spain is one of the most backward nations of Europe. Cotton, wool, and linen are manufactured, but not in sufficient quantities for export. Iron manufactures are active in the Basque provinces; at Toledo [2] are manufactures of steel goods; and silk-spinning has its principal seats at Valencia, Barcelona, and Murcia.

With a seacoast of nearly two thousand miles, Spain is advantageously situated for international commerce; yet, in comparison with that of other maritime nations of Europe, the Spanish merchant marine is small. The best harbors are those of Barcelona, Malaga, Seville, Bilbao, and Cadiz.

Barcelona, on the Mediterranean, in the extreme east of the kingdom, is the most important seaport and commercial and industrial centre. It is in the region of silk-manufacture, and is connected by railway with Valencia and with the various cities of France.

Valencia, on the coast, southwest of Barcelona, exports fruit in large quantities. This city is celebrated for its oranges.

Malaga, near the Straits of Gibraltar, ranks next to Barcelona as a commercial port. Its exports are chiefly ores, wine, raisins, and vegetable fibres. It has sugar

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[1] This metal has many mechanical uses. It is especially valuable as an amalgam ; and, though we produce it in abundance, the quantity of it used in the mining of silver and gold in the Pacific states accounts for our small export.

[2] This place was famous from early times for its manufacture of sword-blades, having but one rival in this respect — the Eastern city of Damascus. The manufacture of these celebrated blades was brought from Damascus to Toledo by the Moors.

Nicaragua is the largest in area of these republics, and has an extensive seacoast on both east and west. The central part of the country is a great fertile plain. Many rivers flow to the sea from this plain, but the San Juan is the only one that is navigable. Much of the public income is derived from the monopoly of the exports of tobacco and gunpowder. Cattle-raising and the collecting of rubber are the chief occupations of the people. There are few exports, that of coffee being the most important. *Greytown*, on the east coast, and *San Juan* on the west coast, are the chief seaports. *Leon*, the former capital, and the largest city, is situated on the Pacific. *Managua*, the new capital, is situated upon the lake of the same name. The total population of Nicaragua is about 300,000.

Costa Rica is the southernmost of these republics. Its most valuable product is coffee. Exports of fruits and tobacco are increasing yearly. *San Jose* is the capital. The total population of Costa Rica is 200,000.

II. THE ISLAND OF HAITI. — This island, which is inhabited mainly by negroes, is divided into two republics — **Santo Domingo** in the eastern, and **Haiti** in the western part. The island has about the same area as Maine, and a population of nearly a million. The exports are chiefly tropical woods, coffee, cotton, sugar, and cocoa.[1]

Port au Prince, the capital of Haiti, has a population of 35,000; that of *San Domingo*, the capital of Santo Domingo, is about 15,000.

QUESTIONS

What can you say of the situation, area, surface, and population of Central America? What is the situation of Guatemala? What are its chief products and exports? Name the Pacific ports of Guatemala. What is the capital? What is the approximate population of the republic? Where is Honduras? What are the chief products? What is the capital? What are the leading industries of Salvador? — the exports? What is the population? What is the capital? Describe Nicaragua, its situation, surface, and products. What are the chief exports? Name the principal seaports. What is the capital? Where is Costa Rica? What is the most valuable product of this republic? What exports can you name? What is the total population of the country? What two republics in Haiti? By what race is the island peopled? What are the leading exports? Name two considerable towns on this island.

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[1] In 1894 Santo Domingo exported to the United States: Sugar to the value of $2,876,000; coffee, $71,000; logwood, hides and skins, and other products, to the total value of $3,200,000. The imports from the United States during the same year were: Cotton goods, $300,000; flour, $167,000; iron and steel goods, fish, bags, provisions, lumber, and other products, to the total value of $1,769,000.

In 1894 Haiti exported to the United States: Logwood valued at $759,000; hides and skins, $11,000; and other products, to the total value of $840,000. The imports from the United States in the same year were: Meat products, $1,500,000; flour, $732,000; fish, $650,000; cotton cloth, $578,000; together with lumber, tobacco, soap, dairy and other products, to the total value of $5,743,000.

CHAPTER XVII.

OTHER SOUTH AMERICAN COUNTRIES

I. VENEZUELA. — Venezuela borders on the Caribbean Sea; Guiana bounds it on the east, Brazil on the south, and Colombia on the west. The greater part of the republic lies in the basin of the Orinoco River. The area, 439,000 square miles, is about twice that of Germany, and the population, 2,198,000, is equal to that of the state of Missouri. Political disturbances have retarded the development of the country, and progress has also been checked by government monopolies granted upon certain native products, and on the right of steam navigation upon Lake Maracaybo. Inland, and at present beyond the reach of commerce, are great forests, extensive grazing areas, and a very fertile agricultural country. Concessions have been made for the building of railways, and these are giving great impetus to the industries and commerce of the interior.

Agriculture is the leading occupation, and cattle-raising is extensively carried on upon the llanos of the Orinoco. The gold-fields, though not yet very productive, are among the richest in the world. Coal exists in considerable quantities; and iron, copper, asphalt, petroleum, silver, tin, and salt abound. Within the last few years, owing to the increased development of the vast natural resources of the republic, the foreign commerce has quadrupled. The exports of greatest consequence are coffee and copper; subordinate items are hides, dyewoods, cocoa, and timber. Most of the trade of Venezuela is with our own country, Germany, and France. We buy of Venezuela principally coffee, and sell to her in exchange foodstuffs, cotton goods, and iron and steel manufactures.[1]

Carácas, the capital, is the principal cocoa-market. *Valencia* exports coffee. *Maracaybo* is the chief seaport. When Columbus visited this region he found the native settlement on Lake Maracaybo built upon piles, whence the name Venezuela, "Little Venice."

II. THE ARGENTINE REPUBLIC. — This republic occupies the southeastern portion of the continent of South America. The area is about one-third that of the United States; the population is estimated at four millions. There is a large and

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[1] In 1894 Venezuela exported to the United States: Coffee, $2,689,000; hides and skins, $496,000; cocoa, $91,000; together with copper and copper ores, rubber, feathers, etc., to the total value of $3,464,000.

During the same year the imports from the United States were: Meat and dairy products, $974,000; flour, $800,000; cotton cloth, $580,000; iron and steel goods, $538,000; together with a variety of other goods to the total value of $4,137,000.

CHAPTER VII.

THE REPUBLIC OF BRAZIL

Brazil became a republic by peaceful revolution late in the year 1889. It is the largest country of South America, containing nearly half the area of the continent. Its extent is nearly equal to that of the United States including Alaska, and the estimated population is fifteen millions. Portuguese is the language of the people, Brazil being the only one of the South American nations in which Spanish is not the national language. Although the coast-line extends four thousand miles, yet there are few good harbors; those of Rio Janeiro, Recife, or Pernambuco, Bahia, and Belem, or Para, being the best. From the coast the land of the southern part gradually rises toward the interior, until it reaches a height of from three to five thousand feet. In these higher lands the products are those of the temperate zone, while along the coast and in the river basins the vegetation is tropical. Nearly all of the productive country is a narrow belt of land, varying from fifty to four hundred miles in width, along the coast and in the valley of the Amazon. Here foreign energy and capital are mainly centralized. In the central and southern parts are extensive undulating plains, devoid of timber and not very fertile.

The finances of Brazil have been poorly managed, and the national debt and the burden of taxation have increased year by year. The native freeborn population, numbering two-thirds of the whole people, is thriftless, and the recent abolition of slavery has added to the difficulties of the industrial situation. Immigration has been looked to as a remedy, but the average annual increase of population from this source is only about ten thousand. Brazil has accordingly been unable fully to utilize her natural resources, which are greater than those of any other South American state.

In value, the commerce of Brazil aggregates about $200,000,000 per annum. The United States and Great Britain each take one-third of the exports, and Great Britain supplies half of the imports, consisting mainly of manufactured goods. Thirty years ago the amount of our trade with Brazil was less than $15,000,000; it now exceeds $90,000,000, owing chiefly to our increased import of coffee.[1] This product, of which Brazil grows more than half the world's supply, is the chief

[1] In 1894 Brazil exported to the United States products to the value of $79,360,000. Coffee was by far the largest export, being valued at $60,377,000. Rubber was valued at $11,058,000; sugar, $5,688,000; and hides at $1,441,000; other articles of less value were cocoa, fruits, wool, lumber, drugs, etc.

The imports into Brazil from the United States in 1894 aggregated $13,827,000. Breadstuffs were $3,538,000; provisions (beef and pork products), $2,452,000; cotton goods, $1,538,000; iron and steel goods, $1,317,000; carriages and cars, $1,279,000; kerosene and other oils, $1,243,000; and of less value, lumber, medicines, drugs, jewelry, etc.

export. Nearly the whole crop is taken by the United States, our import in 1892 being over 450,000,000 pounds. This crop has always proved profitable, and the production is steadily increasing.[1] Sugar was once a valuable export, as was also cotton; but the shipments of both have fallen off. Tobacco is extensively cultivated, and the demand for the crop is steadily increasing; india-rubber, from the Amazon valley, and hides furnish valuable products. These six articles form four-fifths of the total exports. Commerce between Brazil and the United States is one-sided. We buy $80,000,000 worth of her products, and in return sell only about $14,000,000 worth. By the recent establishment of direct steamship communication, and as a result of the reciprocity treaty of 1891, our return trade promises a large increase. [See Note, p. 64.]

While Brazil is primarily a land of plantations, her mineral resources are of great value. They comprise gold, coal, iron, salt, and precious stones, the latter being found in greater variety than in any other country. Coal is mined in the south, and the most celebrated diamond-mines are at Serro do Frio.

The vast basin of the Amazon, comprising more than one-third of the total area, is covered with forests which contain some of the most valuable woods known to commerce. The great industry of the valley is that of rubber-getting, which is almost entirely in the hands of the half-civilized mixed Indian population; and these have injured great rubber-producing tracts by improper treatment of the trees. (See page 184.)

Para, or **Belem,** the only good harbor on the north coast, is the port through which the commerce of the Amazon passes. From this point passengers can ascend the river by steamer to points in Peru, Bolivia, and the interior of Brazil. Though these steamers traverse a vast forest region, they are dependent for fuel upon imported coal, what energy the people along the river possess being expended in collecting rubber. The government has endeavored to attract immigration to the Amazon valley; but the unhealthful climate, low rate of wages, and distance from markets, have prevented development.

Rio Janeiro is beautifully situated on the bay of the same name. The population (321,000) is about equal to that of Baltimore. It is the greatest coffee-market in the world, and, next to Buenos Ayres, the most important commercial centre in South America. As is the case with most South American capitals, trade is mainly in the hands of foreigners. The harbor is four miles wide and twelve long, and the largest ships can enter it.

Pernambuco, or **Recife,** is the outlet for the product of the sugar country lying about it. **Bahia,** similarly situated, exports cotton, coffee, and rum. A submarine cable connects Bahia with Lisbon.

[1] Concerning the coffee of Brazil, Professor Alexander Agassiz wrote: "More than half of the coffee consumed on the globe is of Brazilian origin. And yet this coffee has by itself little reputation, and is even greatly underrated, because a great deal of the best product of the Brazilian plantations is sold under the name of Java and Mocha. The so-called Mocha, considered the finest of all coffees, is often nothing but the small, round beans growing at the summit of the Brazilian plant, very carefully selected and prepared."

city, is situated on a lofty plateau, and is consequently healthful, though but a few hundred miles distant from the equator. *Barranquilla*, on the Magdalena River, and connected by a railway with *Savanilla*, a seaport twenty miles distant, is commercially important — nearly all the foreign trade of the republic passing through it.

Our own trade with the republic of Colombia may be summarized as follows: We buy coffee and hides, and sell manufactures and food-stuffs.[1]

IV. CHILI. — Chili extends along the west coast of South America from Peru to Cape Horn, and is walled in on the east by the great chain of the Andes. Its area, nearly 300,000 square miles, is about twice that of the state of California; the population is estimated at 2,500,000.

Northern Chili has a desert-like surface, and would be of little value but for the deposits of guano and nitre,[2] and for its mines of gold, silver, and copper, in the mountainous regions back from the seacoast. The nitrates form the most important article of export to the United States. The middle part of the republic is the most populous, and is the agricultural section; the southern part is sparsely inhabited and covered with dense forests. The population of this country, unlike that of most other South American states, consists mainly of people of European descent. Most of the land of Chili belongs to large estates, and its cultivation is carried on by the rudest methods. A large proportion of the soil is unproductive; yet where it is capable of tillage, it yields abundant crops. There are extensive coal-mines, and Chili supplies coal to most of the other republics of South America. The north is rich in nitre and guano, the centre in copper and silver, and the south in iron and coal.

The exports in the order of their value are copper, silver, wheat, nitrates, and guano. The leading imports of Chili consist of clothing, food-stuffs, and machinery. The United States buys nitrates and hides, and in exchange sells manufactured goods.[3]

Santiago is the capital, and *Valparaiso* is its port. The latter city is built at the side of a steep cliff which forms a crescent around the bay, the business portion

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[1] In 1894 the exports from Colombia to the United States were: Bananas, $559,000; coffee, $443,000; hides and skins, $438,000; cocoanuts, $308,000; together with vegetable ivory, cocoa, rubber, and other products, to the total value of $2,234,000.

During the same year the imports from the United States were: Manufactures of iron and steel, $485,000; wheat flour, $406,000; meat and dairy products, $246,000; together with lumber, sugar, books, maps, and engravings, and other articles, to the total value of $2,784,000.

[2] The nitre deposits consist chiefly of sodium nitrate, only a small quantity of potassium nitrate being found. These deposits are commercially spoken of as "nitrates."

[3] In 1894 Chili exported to the United States: Nitrate of soda to the value of $2,763,000; wool, $109,000; together with hides, drugs, etc., to the total value of $3,536,000.

The imports from the United States in the same year were: Iron and steel goods, $690,000; cotton goods, $462,000; kerosene and other oils, $277,000; lumber, 207,000; together with agricultural implements, meat products, sugar, medicines, and other articles, to the total value of $2,272,000.

CHAPTER VIII.

THE KINGDOM OF BELGIUM

Belgium, the smallest country of Europe, lies between the southern boundary of The Netherlands and the Ardennes Mountains, from which the land slopes to the plain at the mouth of the Rhine. Its area is about equal to that of the state of Maryland; the population is more than six times as great, being denser than in any other equal area in the world, with the possible exception of the lower Nile valley. Belgium has been described as "one great town." The prosperity of the country depends chiefly on manufacturing. Yet there are large returns from the many small farms into which the land is divided. The dense population is largely due to the fact that the various manufactures are favored by mineral deposits, and by extraordinary facilities for commerce, both foreign and internal. The coast of Belgium is only forty miles in extent, and is generally low, requiring dikes to protect the country from inroads by the sea. The river Scheldt traverses the kingdom from the southwest to the northwest; it is navigable from its mouth to the French border. Flowing nearly parallel to the Scheldt, across the southern part of the kingdom, is the Meuse, also navigable. These and other small rivers are connected by canals, which, with the rivers, have an aggregate length of over a thousand miles.[1] There is a fine system of railways, three-fourths of which are owned and operated by the State.

About one-sixth of the area of Belgium is forest. Nearly all the rest is in a high state of cultivation, chiefly by small landholders; and heavy crops are raised relative to the area tilled. The mineral wealth is very great. The coal mined — nearly 20,000,000 tons yearly — is more than is produced by any other country of continental Europe. Iron and zinc are also extensively mined. The manufactures of iron and steel are important, but fabrics of cotton and woollen are the most valuable commercial products. Flax raising and spinning is one of the oldest industries of the country; and in fine linen and carpetings, Belgium has a world-wide reputation. Manufactures of laces and of paper are also important. Butter, eggs, and vegetables are exported in great quantities to the neighboring countries.

In value the annual commerce of Belgium is about $500,000,000, most of it with England, France, and Germany. Our own imports from Belgium are chiefly glass

[1] A canal has been constructed in Belgium in which the boats are hoisted from one level to another by hydraulic elevators instead of by locks. This canal extends from the coal regions in the interior to Brussels, crossing several other canals at the same grade, so that Belgian coal can be carried directly by boat to Paris, as well as to the principal towns in Belgium and The Netherlands. The boats are towed at the low level into an immense tank, which is submerged in the canal. The gates are then closed; and the tank, which rests on the pistons of a huge hydraulic elevator, is raised to the upper level, where connection is made with the next section of the canal by means of double gates, and the boat proceeds on its way.

and glassware, iron and steel products, and flax and hemp, raw and manufactured. Our exports to Belgium are chiefly cotton, cereals, meat-products, and kerosene.[1]

From the point of view of her total commerce it may be said that Belgium imports raw and textile materials, and exports yarn, cloth, coal, and metal goods.

As a part of the ancient Netherlands, Belgium, with Holland, once controlled most of the commerce of the world. The ships of Antwerp and other ports vied with those of the great commercial cities of Italy. Stimulated by the amount of raw materials these ships gathered, industries sprang up and flourished.

Antwerp, the chief seaport of Belgium, is still pre-eminently a commercial city, though relatively its commerce is not so great as it was three or four centuries ago. It is situated near the head of an estuary of the river Scheldt, and not only carries on a great part of the commerce of Belgium, but also a large in-transit trade from Switzerland and the Rhine districts of Germany. The German export is largely of iron and steel. Grain and petroleum from the United States are received at this point. Antwerp is a great industrial centre for cotton goods, carpets, laces, silk goods, and ship-building. **Ghent,** which is connected by a canal with the Scheldt, is a great factory-town. Sugar, from the sugar-beet, extensively cultivated in Belgium, and cotton and linen goods, are the principal manufactures. **Brussels** is not only the political but the industrial capital. Its carpets have a world-wide repute, and lace-making is one of the chief industries. **Liége** is best known for its manufactures of iron, woollen goods, and straw hats; **Verviers,** for its woollens; and **Mechlin,** for its laces.

QUESTIONS

What is the geographical situation of Belgium? — its comparative area? — population? To what is the density of population to be attributed? What is the extent of coast? What is the nature of the surface near the coast-line? Describe the river Scheldt, — the Meuse. What can you say of the waterways of Belgium? How are most of the railways managed?

What proportion of the area of Belgium is under cultivation? What minerals are largely produced? What can you say of the Belgian output of coal? Name the leading manufactures of the country. What agricultural products are exported? With what countries are most of the commercial exchanges of Belgium conducted? What are the principal exports of Belgium to the United States? From the point of view of her total trade, what are Belgium's chief imports? — her chief exports?

What are the situation, industries, and exports of Antwerp? What country sends iron to Antwerp for export? What American products are largely imported there? What are the manufactures of Ghent? How does the commerce of Ghent reach the sea? What are the principal industries of Brussels? — of Liége? — of Verviers? — of Mechlin?

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[1] In 1894 Belgium exported to the United States sugar to the value of $2,357,000; glass and glassware, $1,445,000; woollen goods, $315,000; leather goods, including gloves, $281,000; iron and steel products, $159,000; together with cement, paper-stock, metals, provisions, and other products, amounting to a total of $8,609,000.

During the same year the imports into Belgium from the United States were: Wheat and flour, $5,632,000; beef and pork products, $5,494,000; cotton, $5,355,000; tobacco, $1,831,000; oils, $1,330,000; corn, $1,033,000; together with seeds, oil cake and meal, lumber, turpentine, leather and its products, etc., to the total value of $26,928,000.

CHAPTER IX.

THE KINGDOM OF ITALY

Italy is a great peninsula projecting from central Europe southward into the Mediterranean Sea. The Apennines Mountains extend through its entire length. Flowing eastward into the head of the Adriatic Sea is the Po, the largest and the only important river. It drains most of the northern part of the peninsula, and its valley is a densely peopled plain of great fertility. Sicily, Sardinia, and a number of smaller islands along the coast, are part of the kingdom. The population of Italy, about 30,000,000, is somewhat smaller than that of France, and the area, 110,000 square miles, is about equal to that of Colorado.

Italy is situated in the same latitude as the New England states, but its climate is drier and much warmer. The chief agricultural products are grain, fruits, olives, hemp, flax, and cotton. The more fertile areas frequently produce several field-crops in the year. Silk-culture is carried to a higher degree of perfection than in any other country except China, the mulberry-tree being carefully cultivated in many sections of the country. Grapes are extensively grown, and wine-making is one of the most important industries. As a wine-producing country, Italy ranks next to France, and in olive-culture it stands first among nations. The hill-slopes of Sicily are covered with olive and orange groves, while the level country is one great wheat-field. Sardinia produces fruits in great variety from its fertile soil; but the chief natural wealth is its mineral deposits, of which iron, lead, and zinc are the more important. Silk is the most valuable product, forming one-third of the total exports. The manufactures are largely of an artistic nature, consisting of glassware, laces, mosaics, and carved marbles and woodwork. The lack of coal is a hinderance to manufacturing development, as very little is mined in the kingdom. This lack, however, is partly compensated by the abundant water-power which the natural slopes of the Apennines and Alps provide. Sulphur is found in the vicinity of Mount Etna in Sicily, marble at Carrara in the northwestern part of the kingdom, iron, sulphur, tin, and lead in the island of Elba, and lead, zinc, iron, and copper in the island of Sardinia. Precious coral, sardines, oysters, and anchovies are the best-known products of the fisheries.

Most of the export trade of Italy is with France and Austria-Hungary. The chief imports come from Great Britain, Austria-Hungary, and France. The leading exports are silk, wine, and olive-oil; and the leading imports are wheat, raw textiles, and coal. The share of the United States in this trade is very small,

consisting of imports of silk and fruits, and exports of cotton, tobacco, and petroleum.[1]

The various parts of the kingdom are united by railway; and in spite of the mountain barrier on the north, connection is made with the railway system of France by the Mont Cenis tunnel, which was opened to traffic in 1871. It is seven and one-half miles long. Ten years later, in 1881, the St. Gothard tunnel, nine miles long, was completed, connecting the railway system of Italy with that of Switzerland. In spite of the extensive seacoast, the chief exports of Italy go by rail through these tunnels, in order to avoid the delays and cost of trans-shipment. This applies especially to silk, wine, and olive-oil.

There were, in 1894, 9,000 miles of railway in the kingdom, about one-fourth of which is owned and operated by the government. At several points the Apennines are crossed by lines of railway which connect the more important roads running northwest and southeast along the two coast-lines of the peninsula. In several instances these lines have been built along the old Roman highways.

The Mediterranean Sea was once the centre of the commercial world. From its geographical situation Italy commanded much of this trade, Venice and Genoa each possessing an immense commerce. But the discovery of the sea-passage to India changed the course of commerce, and led to a decline in the traffic of these ports. The recent building of the Suez canal, however, is tending to restore to them some share of their former importance.

Genoa, on the northwestern coast, has the best harbor in Italy, and conducts the largest share of foreign trade.

Naples, the largest city, ranks next to Genoa in commercial importance, and is the centre of trade for the southern part of Italy. It has extensive manufactures of silk.

Venice, built upon more than one hundred islands, at the head of the Adriatic Sea, is the outlet for shipments from the valley of the Po, and, like other Italian cities, has been greatly aided by railways.

Milan is the greatest silk-manufacturing centre in Italy, being second in this respect only to Lyons in France, and has also important cutlery shops.

Turin has a trade very much like that of Milan.

Palermo, the chief Sicilian port, carries on a large export trade in the fruits and wines of Sicily, and has extensive manufactures of silk and cotton.

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[1] In 1894 Italy exported to the United States: Lemons to the value of $4,075,000; silk, raw and waste, $3,787,000; drugs and chemicals, $2,272,000; oranges, $943,000; marble, $623,000; almonds and other nuts, $432,000; together with works of art, distilled oils, paper-stock, preserved fruits, kid gloves, olive oil, and other products, to the total value of $18,006,000.

During the same year the imports into Italy from the United States were: Cotton, $8,112,000; tobacco, $2,067,000; oils, $1,362,000; lumber, $441,000; drugs and medicines, $261,000; together with breadstuffs, iron and steel goods, hides and skins, and other products, to the total value of $13,808,000.

QUESTIONS

What is the geographical situation of Italy? Describe the course of the River Po. What islands are part of the kingdom of Italy? What is the comparative area of the kingdom? — the comparative population?

What are the chief agricultural products? In what industry is Italy second only to China? In what industry second only to France? What are the field-products of Sicily? — of Sardinia? What other source of wealth has Sardinia? What is the nature of a large part of the manufactures of Italy? What product forms a third of the total exports? What special disadvantage do Italian manufactures labor under? How is this in some measure compensated? What mineral products are found in Sicily? — in Sardinia? — in Elba? To what country is most of the iron of Elba exported? What are some of the products of the fisheries?

With what country is the bulk of the export trade of Italy carried on? From what countries do the bulk of the imports come? What are the chief exports? — the chief imports? What products are mainly imported from Italy into the United States? What are the principal items sent to Italy by the United States?

By what means is Italian commerce with France and Switzerland carried on? How have the tunnels of the Alps affected the sea-going trade of Italy? What can you say of the railway system?

What recent engineering-work has contributed to the revival of Italian commerce? Give some account of the situation, industries, and trade of Genoa, — of Naples, — of Venice, — of Milan, — of Turin, — of Palermo. Which seaport of Italy conducts the largest commerce? What cities have extensive silk industries? What city affords an outlet for the products of the valley of the Po? In what city is cutlery manufactured? In what city are there considerable cotton factories?

CHAPTER X.

THE KINGDOM OF THE NETHERLANDS

The Netherlands, or Holland, is the small country occupying the delta of the River Rhine. The area of the country, 12,727 square miles, is about as great as that of Massachusetts and Connecticut together; the population, 4,732,000, is equal to that of Canada. This small and densely-peopled country conducted a foreign commerce of $100,000,000 in 1893. With the exception of Greece, no country in Europe has so many inlets of the sea, yet along the whole coast there is no good natural harbor. The country is low and flat. One-third of the area, chiefly in the western part, is below the level of the sea, having been reclaimed by centuries of labor devoted to the building of a system of dikes that rank among the greatest feats of engineering. The length of navigable river-channels is more than 1,000 miles. A network of canals, resembling our country roads in their frequency and intercommunication, has an aggregate length twice as great. These canals vary much in size. Some are large enough to accommodate deep-water vessels; others are scarcely more than ditches. The waterways are supplemented by a railway system having a mileage about half as great, partly owned and operated by the government.

On account of their command of the Rhine trade of Germany, and of their great colonial possessions, the Dutch are a nation of merchants; and the value of their foreign commerce is greater, for the population, than that of any other nation of Europe. Most of the exports go to Great Britain and Germany, and nearly half the imports come from these countries. The export trade includes not only the products of The Netherlands, but the sugar, coffee, tea, and rice of her colonies. In the amount of shipping-tonnage, compared with its population, The Netherlands ranks sixth among nations. The imports of the United States from The Netherlands consist mainly of tobacco, precious stones, and coffee; our exports to The Netherlands are chiefly cereals, cotton, animal-products, and petroleum.[1]

The agricultural industries of The Netherlands, while important, are inferior to the grazing interest. Dairy-products, especially butter and cheese, are among the largest exports. The soil is skilfully tilled; bulbs and seeds rather than other

[1] In 1894 The Netherlands exported to the United States: Tobacco to the value of $4,543,000; precious stones, $1,243,000; coffee, $986,000; tin, $571,000; pickled fish, $499,000; together with chemicals and drugs, paper-stock, rubber, spices, flax, iron and steel goods, cheese, rice, spirits and wine, vegetables, etc., to the total value of $10,690,000.

During the same year there were imported from the United States: Grain and flour to the value of $12,994,000; oleo for making imitation butter, $7,124,000; copper, $5,426,000; beef and pork products, $5,339,000; cotton seed and other oils, $3,820,000; seeds, $1,378,000; tobacco, $1,187,000; together with lumber, turpentine, rosin, oil cake and meal, cotton, etc., to the total value of $43,087,000.

crops being raised for export. Dutch horses are noted for their size and strength. Poultry-raising and bee-culture are thriving industries.

Manufactures are extensively carried on, and a variety of articles is made, cotton and linen goods being those mostly exported. In proportion to its population, The Netherlands imports as much cotton as any country on the continent of Europe. Iron and steel goods are also made; but peat being the chief natural fuel in the country, the ore, as well as the coal to smelt it, is imported. In general the winds are depended upon for motive power. The surface of the country is so level that full advantage is taken of the winds that sweep over it with little cessation. Windmills not only keep the country from inundation, but they regulate the supply of water in the canals, grind grain and coffee, wash paper-pulp, bruise oil-seeds, and perform other like operations. Nearly all industries are carried on in small establishments. Among the manufactured goods for which the country is famous are paper, gin, and delft ware. The building of wooden ships is a considerable industry; the timber being floated down the Rhine from the German forests, or imported from Norway.

The fisheries give employment to 10,000 men. The product of the herring fishery in the North Sea was in 1893 valued at over $2,000,000.

The Netherlands is a country of large cities and towns. **Rotterdam,** the chief commercial city, is situated on the River Maas, one of the mouths of the Rhine, eighteen miles from the seacoast. The river has a natural depth of only five feet, but it has been so deepened as to admit the largest ships. This city carries on most of the commerce of the German Rhine district, and has also a great share of the colonial trade. **Amsterdam,** the constitutional capital and the largest city, is situated on the Zuyder Zee. The ancient harbor having become shallow, the North Sea Canal was recently built, thereby connecting the city directly with the coast. It is an important industrial centre, especially in making marketable the raw materials of the Dutch colonies. The city was formerly the seat of the banking transactions of the world, and is still a great financial centre. It is a leading diamond-market, diamond-cutting being one of the most important industries. **The Hague** is the actual capital of the kingdom, and a political, social, and educational centre, rather than an industrial one. **Haarlem** is the centre of the flower-cultivating district.

COLONIAL POSSESSIONS. — The colonial possessions of The Netherlands comprise Surinam, or Dutch Guiana, in South America, Curaçao and five others of the West India Islands, and, by far the most important, the Dutch East Indies. These include the greater part of Borneo, the western half of New Guinea, Sumatra, Java, Celebes Island, and the Moluccas, or Spice Islands. The total colonial population, about 29,000,000, is six times that of the mother country.

Most of the trade of the Dutch East Indies is with the mother country, although Great Britain, France, and China have each a share of it. The leading exports are sugar, coffee, tea, rice, indigo, cinchona, tobacco, and tin. Most of these are sent to The Netherlands, though about half the rice is sent from the other islands to Borneo and to China. Raw sugar is exported from Java to Great Britain,

and cotton manufactures and iron goods are imported in exchange. The United States imports coffee, sugar, and spices from the Dutch East Indies, to the annual value of about two millions, returning nearly the same value of petroleum.

Borneo has rich coal deposits. Spices, camphor, gutta-percha, sugar, fruits, cotton, and tobacco are exported.

Sumatra produces coal, and exports coffee and tobacco. Minor exports are rice, sugar, and spices. The adjoining island of **Banca** is one of the chief sources of tin, the metal from these mines being the purest in the world. **New Guinea** and **Celebes** are commercially undeveloped.

Java, the most important of all Dutch colonies, together with the neighboring island of **Madura,** supports more than half the population of the Dutch East Indies. The greater part of the land of Java is owned and cultivated by agents of the home government. On the lowlands, rice, sugar, and cotton are the staple crops; at higher altitudes, coffee, tea, and fruits are raised. Rice is the largest, but coffee is the most valuable, of these crops. Cinchona and tobacco are also produced. *Batavia* is the largest city of Java, and the capital of the Dutch East Indies. The harbor is poor, but its commerce is considerable. *Macassar,* in the southwest of Celebes Island, and *Surabaya,* on the east coast of Java, are other important seaports.

The **Moluccas,** or Spice Islands, export cloves and nutmegs in great quantities.

Surinam, situated between British and French Guiana, has an area about three times as great as that of the state of New York, and a very sparse population, mainly of blacks. The principal exports are sugar, rum, and coffee. The commerce of the Dutch West Indies is relatively of little consequence.

QUESTIONS

Describe the geographical situation of The Netherlands. What is its comparative area? — population? What is the annual value of the commerce of The Netherlands? What is the nature of the surface of the country? What can you say of its facilities for commerce?

To what countries are most of the exports of The Netherlands sent? What proportion of the imports come from the same countries? What are our principal imports from The Netherlands? Where are the coffee and tin imported by us from that country produced? [*Ans.* — In the Dutch East Indies.] Name our chief exports to The Netherlands.

What Dutch manufactures are articles of export? What is the principal motive power in Dutch industries? What results from the lack of mineral deposits? What can you say of the fisheries of Holland?

Describe the situation and trade of Rotterdam, — of Amsterdam. What city is the capital? Of what industry is Haarlem the centre?

What are the chief colonial possessions of The Netherlands? With what foreign countries is most of the Dutch East India commerce conducted? What are the chief exports of these colonies? What are the principal commercial exchanges of Java with Great Britain? What are our own imports from the Dutch East Indies? What item constitutes the bulk of our exports to these colonies? Name some products and exports of Borneo, — of Sumatra. What island is the most important of all Dutch colonies? What are its lowland products? — its highland products? What city is the capital of the Dutch East Indies? Name other important seaports. What are the leading products of the Moluccas? Where is Surinam, and what are its exports?

CHAPTER XI.

THE REPUBLIC OF MEXICO

Mexico ranks next after The Netherlands in the amount of trade with the United States. The area of the country, 740,000 square miles, is about three times as great as that of Texas, and the population, 10,000,000, is six times as large. The population is densest in the southern part of the country where, owing to the higher altitude of the land, the climate is cool. Three-fourths of the people are of mixed or Indian blood. The great body of the laborers are thriftless victims of the land system which has permitted the accumulation of vast estates in few hands. The purchase by foreigners of extensive areas, the growth of the railway system, and the influx of immigrants, are tending to improve the industrial situation.

Mexico's great wealth has hitherto consisted in her mines of silver, gold, and copper. It is estimated that the silver-mines have furnished more than half the world's supply of that metal. During recent years the industry of the country has been drifting away from mining and turning to agriculture. Nearly every plant that grows between the equator and the Arctic circle can be raised in Mexico, and agricultural products of every sort would be greatly increased by a good system of irrigation. Cereals are the chief field-products of the highlands; in the lowlands hemp, sugar, coffee, cotton, and tobacco are the staple crops. The forest-products are mahogany, dye-woods, gums, and spices. Within recent years, the rearing of cattle, horses, and sheep has become a great industry in the north, and millions of dollars from the United States have here been invested.

Owing to the deficiency of the coal supply, which has been one of the greatest obstacles to the growth of Mexican commerce and industries, manufactures are carried on upon a small scale. Cotton-spinning has become of some importance, affording business for about a hundred factories. The largest of these are in the vicinity of Vera Cruz, near which city there is valuable water-power.

As with other Spanish-American countries, the business of Mexico is largely in the hands of foreigners. Commerce is developing very rapidly; and the United States is the chief selling-market, taking three-fourths of all Mexican exports, except those of the precious metals. Each year we buy more heavily of Mexican products; and this increased purchase is greater than the increased product, showing that the commerce of Mexico is becoming more and more American. The precious metals constitute two-thirds of the total value of exports. Apart from these it may be generally said, that Mexico sells mahogany, dye-woods, spices, coffee, hides, and hemp; and buys textile fabrics, articles of iron and steel, and leather goods. A large share of the manufactured goods imported by Mexico come from France.

Within the last decade the Mexican government has encouraged by subsidies the extension of the railway system of the country, and the important towns are now connected with the City of Mexico by rail. The northward-running roads have been constructed by American capitalists. The City of Mexico is now but six days' journey from New York, and two other lines will soon connect that capital with the United States. Four railways will cross Mexico from sea to sea; and these, with their branches, will give the country a complete system, and open productive areas to further development. The completion of the projected Tehuantepec interoceanic railway promises to transform southern Mexico. With its varied mineral products and fertile soil, this part of the republic has always been regarded as the richest section of the country, yet up to the present time it has not been commercially accessible. The Tehuantepec route between New York and San Francisco will be 1,500 miles shorter than the Panama route.

The new route will make **Tehuantepec** an important commercial port of Mexico on the Pacific coast; but **Acapulco,** situated about midway between the northern and southern borders, with its fine harbor, gives indications of becoming the chief shipping-port. Both **Mazatlan** and **Guaymas** have good harbors. **Vera Cruz** and **Matamoras** are the chief ports on the Gulf coast. The harbor of Vera Cruz is not very good, though it is the port of the city of Mexico. Matamoras was of little consequence until the recent growth of the railway system. Its trade is now rapidly extending, not only with other Mexican ports, but with New Orleans and other ports of the United States. The **City of Mexico,** one of the largest and finest among the capitals of the Spanish-American republics, is a busy commercial centre, being at the heart of the railway system of the country. Many towns that once had active trade are now mere markets of supply and distribution for the City of Mexico.[1]

QUESTIONS

What are the comparative area and population of Mexico? Why have her industries been in a backward condition? What causes are tending to improve the industrial situation?

What is the most valuable mineral product? With what important mineral is Mexico poorly supplied? Name the principal agricultural products, — the forest products. What can you say of the grazing industry?

What effect has the lack of coal upon the manufacturing industries of Mexico? Where, and by what means, is cotton-spinning done?

What country takes three-fourths of all Mexican exports except the precious metals? What general statement can you make concerning Mexican commerce? Whence does Mexico derive most of her manufactured imports?

What can you say of the railways of Mexico? What results are likely to follow the completion of the Tehuantepec road? Name important Pacific ports of Mexico, — Gulf ports. Of what interior city is Vera Cruz the port?

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[1] In 1894 Mexico exported to the United States: Coffee valued at $6,964,000; ores, gold and silver bearing, $6,900,000; lead, $6,463,000; textile grasses, $4,067,000; together with hides and skins, drugs, dyes, woods, copper, etc., to the total value of $28,727,000.

The imports into Mexico from the United States in 1894 were: Iron and steel goods, $3,207,000; cotton, $1,391,000; lumber and its products, $997,000; oils, $828,000; coal, $673,000; breadstuffs, $518,000; cotton goods, $460,000; gunpowder and other explosives, $451,000; quicksilver, $361,000; together with other products to a total value of $12,441,000; which is an increase of $5,000,000 over the value of 1887, but $7,000,000 less than in 1893, when the total imports from the United States were nearly $20,000,000.

CHAPTER XII.

THE EMPIRE OF JAPAN

THE empire of Japan consists of several groups of islands lying off the east coast of Asia, in about the same latitude as that of southern Europe. Four of these islands are large, and three of them contain almost the whole population. The surface is mountainous and volcanic, and the low grounds and valleys that contain productive land are of limited extent. The rivers are short and of little commercial consequence. The area of the empire, about 150,000 square miles, is three times that of the state of New York; the population, 40,000,000,[1] is nearly two-thirds that of the United States. The climate of Yezo, the northernmost island, is severe, and the population sparse; in Hondo and Shikoku much milder and more equable; while owing to the Japan Current and a low latitude, Kiushiu, the southernmost large island, has a semi-tropical climate.

The roads of the country are primitive, few, and poor; there is little live-stock; and tillage by the plough, or by any implement more modern than the spade, is scarcely known. Yet agricultural products are raised in variety, — cereals in the north, and rice, tea, and silk in the south, — all of them due more to the industry and skill of the people than to any special fertility of the soil. Rice is the staple crop, a greater area being devoted to its cultivation than to all other field-products. Coal, iron, copper, and silver are extensively mined, — coal in Yezo, and iron in Hondo. Coal is a considerable export to neighboring countries, — and even to California and the western countries of South America.

In manufactures the Japanese display great skill, not only in the goods they have made for generations, but also in imitating the products of Europe and America, many of which, formerly imported, are now made in Japan. Raw silk and silk fabrics are the leading Japanese manufactures. Another ancient industry is that of lacquer-work, and in this their proficiency is so well recognized that the name "Japanning" is generally adopted throughout the world for similar work. The mulberry-tree, on which the silk industry depends, is cultivated in the south; the lacquer-tree mainly in the north.

In 1852 the United States sent an expedition to Japan under Commodore Perry, and two years later succeeded in forming a commercial treaty with that country. Japan, which up to that time had excluded all foreigners, unwillingly opened a few ports, known as treaty ports, to commerce with the outside world. During recent

[1] According to the census of 1890, there is in some parts of the empire an average of 401 inhabitants per square mile, a density of population surpassing that of Belgium.

years the nation has made remarkable progress. The Japanese are natural traders, and their products are in great demand in other parts of the world. The exports are chiefly raw silk, which furnishes half the total export trade; tea, most of which comes to the United States; rice, and coal. The imports are mainly cotton and woollen goods and petroleum. Our own trade with Japan may be summarized thus: we buy silk and tea, and sell to her petroleum.[1] In value about one-tenth of our imports from this country consists of hand-worked articles, both useful and ornamental, that display the marvellous ingenuity and delicacy of Japanese workmanship. No other country seems able to compete with Japan in products of this nature, and no other country gives so much that is artistic and beautiful for so little money.

Japan has many good harbors, and several treaty ports; but the bulk of her foreign commerce is done at **Yokohama,** which is the great national port, and the main distributing centre of the empire. **Tokio,** the capital, contains a population of 1,300,000. **Nagasaki** has a deep harbor, and is an important centre of the coal-trade. The chief commercial cities are connected by railway, and these are continually extending and improving their means of communication and transportation.

Corea, the mountainous peninsula to the northeast of China, has in 1895 become independent of the suzerainty of China as one of the results of the war between China and Japan. Its chief trade is the export of ginseng root and hides. Seoul is the capital.

Formosa, an island off the coast of China, has through the Chino-Japanese war of 1894–95 been ceded to Japan. It has an important trade in fine tea, most of which comes to the United States.

QUESTIONS

What is the geographical situation of Japan? What can you say of its surface? Give the comparative area and population of the empire. Describe the climate of the four principal islands.

How is the cultivation of the soil carried on? What are the products of the north? — of the south? What is the chief food-crop? What minerals are extensively mined? Where is coal found? — iron? In what section of Japan is the mulberry-tree especially cultivated? — the lacquer-tree? What industry is dependent upon the former? What industry, upon the latter?

What are "treaty ports"? What are the chief exports of Japan? — the imports? To what country is most of the tea-crop exported? From what country does Japan derive its supply of petroleum? Summarize our own trade with Japan. In what class of workmanship are the Japanese unrivalled?

Through what port is the bulk of Japanese trade carried on? Name the capital of Japan. For what export is Nagasaki noteworthy? What can you say of the railways of Japan?

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[1] In 1894 the United States imported from Japan: Silk and silk goods to the value of $10,450,000; tea, $5,504,000; porcelain, rice, and other articles, to a total value of $19,426,000.

The United States exported to Japan the same year: Petroleum, $2,226,000; flour, clocks, watches, iron and steel goods, etc., to the total value of $3,981,000.

CHAPTER XIII.

THE EMPIRE OF CHINA

China occupies the middle eastern part of Asia. Its area is nearly one-fifth that of the continent, and is about one-twelfth of the entire land surface of the globe. The mountain-ranges, where rise the great rivers of the empire, added to the large amount of desert land in the western part, leave the remaining area, almost entirely in the river basins, to be densely inhabited by about 400,000,000 of people.

At the north is the Hoang-Ho, or Yellow River. It is nearly 3,000 miles long, but shallow and rapid. It often overflows its banks and changes its bed, so that the frequent and destructive floods justify its name, "the Sorrow of Han." The Yang-tse-Kiang in the south has about the same length as the Hoang; it is navigable for 1,000 miles. Many of the largest and most flourishing cities of the empire are on its banks, and nearly half the population of the country is settled in the basin of this river. Near the southern boundary of China is the Si-Kiang or West River, sometimes called the Canton River, from the name of the city near its mouth. Vessels of light draught can ascend it 150 miles. Another important waterway is the Grand Canal, which for 700 miles traverses the most fertile regions of the empire, and is the channel of communication between the north and the south. The roads and canals are nearly all in poor condition, and part of the Grand Canal has fallen into disuse.

The industries of China are in a backward state; though the Chinese, like the Japanese, have long excelled in the manufacture of silk fabrics, laces, pottery, and carved ornaments. Opium is a staple crop, and is raised in nearly every province.[1] Tea and sugar are extensively cultivated. The empire is especially rich in deposits of coal, which as yet have been comparatively little worked. The coal-fields are estimated to be twenty times as extensive as those of all Europe, and anthracite forms a large proportion of the whole. In course of time, when the industries of the western world shall have gained a foothold in China, national progress must be greatly stimulated by the inexhaustible supply of this mineral.

Until about forty years ago China strictly excluded foreigners and their commerce. But one port after another has been opened, until now twenty-two treaty ports are free to vessels of all nations. Yet China has not shown the progressive spirit of Japan, and her commerce and industries are less fully developed.

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[1] In the western provinces, where coin is scarce, opium takes the place of money. When starting on a journey, a native carries his estimated expenses in the form of opium, selling here and there as much as he requires. Even students going to Peking carry their funds in the form of opium.

The exports are almost exclusively tea, silk, and silk fabrics, sugar and straw-braid; and of these tea forms two-fifths of the total value. Owing to the increased cultivation of the poppy-plant, the importation of opium is steadily falling off, and the only remaining import of considerable value is that of cotton goods. But few wool-bearing animals are reared in the empire; and although in a great part of the area the climate is severe, the clothing of the people is largely of cotton, being padded for protection in the winter season. Hence the extensive importation of cotton goods. Rice is an important, but subordinate import. The share of the United States in the trade of China is comparatively small. We import from China tea, silk, and straw-braid, and send in exchange cotton-cloth and petroleum.[1]

Attempts have been made to develop the resources of the country by the building of railways; but the dread of foreign innovation, and of the industrial changes that must result, has hitherto frustrated all such endeavors. There are recent signs, however, that the immemorial conservatism of the Chinese, and the fixity of their institutions, both political and social, must give way before the encroachments of western enlightenment and progress.

Peking, the capital and metropolis of the empire, has an estimated population of 1,000,000. The city has no particular industry, and foreigners are not allowed to trade there. Its port, **Tientsin,** a city of 1,000,000 population, has considerable foreign commerce; but it is chiefly important as a terminus of the Grand Canal, and a centre for local trade.

Canton, situated near the mouth of the Si-Kiang, has a larger population, of which it is estimated that 100,000 live in boats, moored in rows on the river. Many factories for making cloth, especially silk, are here.

Shanghai, a port about half way between Peking and Canton, has a population of about 500,000; but its commerce is greatly crippled by the silting of the harbor, across the entrance of which a sandbar has formed. Improvements are contemplated which will make it one of the best harbors on the coast. **Hong Kong,** commercially by far the most important city on the eastern coast of Asia, is a British possession, situated on an island near the mouth of Canton River.

Thibet is a mountainous province, the surface of which is over 12,000 feet above sea-level. It has some caravan trade, and is commercially best known for its wool-product. This is clipped from the Thibet goat, and is used in the making of the famous Cashmere shawls.

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[1] In 1894 China exported to the United States: Tea, $7,697,000; silk and silk goods, $3,391,000; woods, $833,000; matting for floors, $807,000; hats and bonnets, $528,000; with other goods, to the total value of $17,135,000.

Imports into China same year were: Cotton cloth, $2,844,000; oils, $2,438,000; and other articles, to the total value of $8,858,000.

QUESTIONS

What can you say of the area of China? What is the estimated population? Give some account of the Hoang River, — of the Yang-tse-Kiang, — of the Si-Kiang. What artificial waterway connects the north of China with the south?

What can you say of the condition of industry in China? — the manufactured products? What are the chief agricultural products? In what mineral is China especially rich? How is the abundance of coal likely to affect the commercial and industrial future of the country?

What are the important exports of China? — the imports? How is the great importation of cotton goods to be accounted for? Give the items of our own trade with China.

Locate and describe Peking, — Tientsin, — Canton, — Shanghai. What English colony is an important port in Chinese trade? What city is a terminus of the Grand Canal? What city has silk factories?

What large island off the coast? What product of the island of Formosa is largely exported to the United States? What are the exports of Corea? What product of Thibet is especially noteworthy?

CHAPTER XIV

THE UNITED STATES COLONY OF THE HAWAIIAN ISLANDS

NEXT in importance to our trade with China is that with the Hawaiian or Sandwich Islands, a group of eight inhabited and four uninhabited islands, situated about one-third the distance between San Francisco and Sydney. They are the most important of the Pacific islands, and American whalemen were the first to open them to the world. With the decline of whaling, and the increase of general commerce, they became recruiting-ports to the merchant marine. Heretofore an independent government, the islands are now a colony of the United States.[1] Nearly all the fertile area is owned by Americans, and the bulk of the commerce is with our own country.[2] The staple product and export is sugar.

The natives of these islands, called Kanakas, are fast dying off, and a new population is taking their places. Chinese coolies at one time threatened to overrun the islands, but they are now excluded. Portuguese, Americans, and Japanese are emigrating thither, and it is their industry that has increased the productiveness of the islands.

Honolulu is the capital and most important city. It is connected by steamship with the United States, Australia, and China.

QUESTIONS

What is the situation of the Hawaiian Islands? With what country is most of the commerce of these islands carried on? How were they opened to commerce? By whom is most of the fertile area owned? What is the leading commercial product of the Hawaiian Islands? What are the chief exports of the United States to these islands? [*Ans.* — Manufactured goods.]

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[1] In answer to a petition from the Islands, the United States Congress passed an act on July 7, 1898, to annex them. The formal ceremony of raising the United States flag took place August 12, 1898.

[2] In 1894 the Hawaiian Islands exported to the United States: Sugar, $9,379,000; rice, $357,000; fruits and nuts, $101,000; coffee, hides, and skins, etc., to the total value of $10,065,000.

The imports from the United States were: Iron and steel goods, $405,000; cotton goods, $297,000; wheat flour, $197,000; woods, tobacco, fish, drugs and dyes, leather goods, etc., to the total value of $3,217,000.

CHAPTER XV.

OTHER COUNTRIES OF EUROPE

I. THE EMPIRE OF RUSSIA. — The Russian Empire consists of Russia and Siberia. The former is in Europe, the latter in Asia.

Russia comprises about three-fifths of the area of Europe, and has a population of 100,000,000. Its short coast-line is low and flat. The central part is a plateau about one thousand feet above the sea-level, and from it the land slopes gradually toward the White and Baltic seas in the north, and the Caspian and Black seas in the south. The sluggish rivers are generally navigable, furnishing, in connection with the canals, so vast a system of internal communication that the building of railways has not pressed itself as a necessity upon the government.

Though a great portion of the area is unfit for cultivation, Russia is nevertheless pre-eminently an agricultural country. In the extreme north the climate is rigorous; the southeast is an arid region, and the interior is an almost unbroken forest. The western part of the empire, between the Baltic Sea on the north and the Black Sea on the south, is fertile, and produces abundant crops. Cereals can be grown here more cheaply than in other parts of Europe, and this region is the granary of the continent. The wheat crop is yearly increasing in amount, and is a strong competitor in the European market against that of the United States. Flax and hemp are extensively cultivated. Fish are abundant in the rivers and in the Caspian Sea, sturgeon being the chief export of this industry.

The mineral products include gold, silver, lead, platinum, copper, iron, coal, rock-salt, and petroleum. Mining is in a low state of development, owing to lack of improved methods, remoteness of deposits, and poor transportation facilities; but the petroleum fields on the west shore of the Caspian Sea are worked with much energy. Heretofore they have been difficult of access; but a railway has been built to connect the fields with Batum and Poti on the Black Sea, and a pipe-line is now in course of construction. The petroleum produced in these fields is greater in amount than that mined in the United States, and when refined has higher illuminating power.

Though mainly a producer of raw materials, Russia has also considerable manufactures. The more important of these are cotton and linen goods, leather, and furs. In the tanning of "Russia" leather great perfection has been attained, but the product is now closely imitated in other countries. In making sheet-iron the Russians are unexcelled.

St. Petersburg, the capital, with a population of nearly a million, is situated on the Neva River at the head of the Gulf of Finland. Formerly Kronstadt, the

Russian naval station, was the port of St. Petersburg; but in 1885 a ship canal was built to the capital, which has resulted in diverting to it the commerce once belonging to the former city. St. Petersburg is connected with the large rivers of the empire by canals, and with the producing centres by railway. It is the centre of a great trade in the products of the northern part. Industries are fast increasing in the city and its vicinity, chiefly the manufacture of cotton and linen fabrics, and iron and steel goods.

Riga, the next seaport in importance, is situated on the Baltic, southwest of St. Petersburg. Its exports are flax, linseed, lumber, hemp, and cereals; and the commerce is mainly with Germany and Great Britain.

Lodz, a Polish city, is important for manufactures of cotton and wool. The growth of this place has been remarkable, the population having increased five-fold in the last thirty years.

Archangel, on the White Sea, has a great summer trade in the products of the northern part of the empire, such as flax, linseed, seal-skins, and hides. Considerable flax-spinning is done inland, and the product is exported here.

The southern part of Russia is better supplied with railways than the northern part. **Odessa,** the seaport for the basins of the Dneiper, the Bug, and the Dneister rivers, is rapidly becoming a city of great commercial importance, ranking next to St. Petersburg. Cereals and hides, tallow, and wool from the grazing districts, are the leading exports. Flour-making is the most important local industry. Odessa is in direct steamship communication with the principal Mediterranean ports, with Great Britain, and, by way of the Suez canal, with India, China, and the East.

Several minor southern ports — **Taganrog, Cherson, Nikolaiev,** and **Sebastopol** — ship grain and other products; and **Batum** and **Poti,** on the east of the Black Sea, export petroleum. The harbors of St. Petersburg and Riga are blocked with ice from three to five months in the year, while the Black Sea ports are always open.

Astrakhan, on the Caspian Sea, is the seat of the valuable Caspian fisheries. The city has also manufactures of silk, cotton, and leather.

Moscow lies in the heart of Russia, and is the railway centre of the empire. It sends cereals, hemp, flax, furs, and other products of the interior, to St. Petersburg for export, and distributes throughout the empire the tea, silk, and other goods brought from Asiatic countries, as well as the manufactured goods of western Europe. Moscow has many industries; sugar-refining, metal and wood working, cotton, woollen, linen, and silk weaving, and paper-making being the most notable. The opening of rich coal deposits near this city has proved of great benefit to its industries.

Warsaw, in the extreme west, has railway communication with Germany, and carries on a great export trade in cereals and other raw materials of the empire. The opening and successful working of coal-mines in its neighborhood have led to considerable industrial development, the main item of which is cotton-manufacture. **Kief** is specially noteworthy for its leather-factories and sugar-refineries.

A peculiar characteristic of inland trade in Russia is the holding of annual fairs, where merchants from all sections of the country meet and carry on an exchange of the wares of western Europe and of Asia, as well as of the products of the different sections of the empire. The largest of these fairs is held every July at **Nijni Novgorod**, 275 miles east of Moscow. It is on a great trade-route, where the metal and other wares of the north meet the products of the fields of the south, the fish of the Caspian, and the tea, cotton, and silk from Persia, China, and the East. The introduction of steam navigation on the Volga, on which, not far from Nijni Novgorod, the annual fair is held, has greatly increased the importance of the fair. The settled population of the town is about 50,000, but at the time of the fair the number is five times as great. Manufactured goods form a great part of the trade ; and the prices of many of the products of the empire, especially of cotton, wool, silk, and iron goods are regulated by this fair. The total value of the transactions annually consummated here is estimated at $200,000,000. Other fairs are yearly held at *Poltava* and *Kharkof*, towns in the southwest.

Nearly all the foreign commerce of Russia is carried on with Great Britain and Germany.[1] In general we may say that Russia exports cereals, and imports raw textiles and coal. The United States takes from Russia wool and skins, and sells her in exchange raw cotton.[2]

Siberia, the vast Asiatic dependency of Russia, occupies the whole of the northern part of the continent of Asia. It has long been regarded as a bleak and inhospitable region; but recent explorations have shown that the southern part of this territory, especially along the valley of the Amoor River, contains extensive grain-growing areas. To develop this region the Russian government has begun the construction of a railway to connect St. Petersburg with Vladivostok. (See note p. 41.) The forest area is extensive, and fur-bearing animals are abundant, particularly in the less-inhabited eastern portion; and furs are the principal export. Before the discovery of gold in California and Australia, the chief supply of Europe came from the eastern slope of the Ural Mountains, and the product is still considerable both there and in the valley of the Amoor River. Lead, silver, copper, iron, salt, and coal are also produced; but improved methods have not been generally adopted. The greatest deposits of graphite yet discovered are in Siberia, and much of the world's supply of platinum has come from this region. Emeralds, jasper, topaz, and other valuable stones, are also found. The trade in these products is carried on almost entirely by caravans.

Tobolsk, a small city near the Ural Mountains, on a branch of the Obi River, is the centre of trade in corn, salt, timber, and fish.

Vladivostok is the chief seaport on the Pacific, and the centre of trade in furs, gold, and dried fish.

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[1] As an interesting item of export, it is stated that in 1893 Russia exported 744,000,000 eggs, of the value of $11,000,000, chiefly to Germany, Austria, and France.

[2] In 1894 Russia exported to the United States: Wool to the value of $874,000; drugs and chemicals, $837,000; furs and fur skins, $354,000; flax, hemp, and jute, $289,000; hides and skins, $284,000; bristles, $142,000; platinum, $106,000; together with hair, iron and steel goods, and other products, to the total value of $3,206,000.

The imports into Russia that year from the United States were: Cotton, $5,537,000; agricultural implements, $271,000; naval stores, $263,000; iron and steel goods, $232,000; together with other products, to the total value of $6,989,000. Nearly all of these goods were imported into Baltic ports.

II. **THE REPUBLIC OF SWITZERLAND.** — Switzerland occupies the mountainous region lying between Germany, Austria-Hungary, Italy, and France. The area, 16,000 square miles, is about twice that of the state of Massachusetts; the population is 3,000,000. The greater part of the population is engaged in agriculture and cattle-raising, and the leading products of these industries are cheese and condensed milk. In 1887 the export of cheese amounted over 20,000 tons.

Considering the natural disadvantages under which they labor, especially the absence of any considerable deposits of coal and iron, the Swiss have achieved a high rank among manufacturing peoples. The nature of the surface of the country has provided abundant water-power, which somewhat compensates for the lack of coal; but a large part of the manufactured wares of Switzerland is literally hand-made. The best-known products are clocks and watches, and carved woods.

Nearly all raw materials are imported, and the bulk of exports consists of manufactured goods. In a general way it may be said that Switzerland buys cereals, and raw cotton and silk, and sells clocks and watches, silk and cotton goods, and cheese and condensed milk. The United States imports from Switzerland clocks and watches, laces and embroideries, silk goods and silk; and exports to Switzerland a variety of goods of much less value.[1] Silk manufactures were greatly stimulated by the opening of the St. Gothard tunnel through the Alps, thus permitting the direct importation of raw silk from Italy. The greater part of the trade of Switzerland is conducted with the four nations whose borders enclose it, but considerable commerce is carried on with other countries, especially with Great Britain. The Swiss derive a large revenue from tourists, who, to the estimated number of a million annually, visit the mountains and lakes of Switzerland.

Geneva is the centre of the watch- and clock-making industry, the work being done in the surrounding villages. **Zurich** is the chief educational centre and largest city. Most of the cotton and silk goods are manufactured here. The city also carries on a large in-transit trade; *i.e.*, goods destined for other points pass through the city and yield a revenue from re-shipment.

III. **THE EMPIRE OF TURKEY.** — Turkey in Europe occupies a large part of the Balkan peninsula. The soil is generally fertile; but agriculture is carried on in a primitive way, and only a part of the productiveness of the soil is utilized. Fruits are extensively grown, and raisins form the largest item of export. Wheat, cotton, and tobacco are other important cultivated crops. On the slopes of the Balkan Mountains are great fields of roses from which attar of roses is produced. Grazing

[1] In 1894 Switzerland exported to the United States: Laces and embroideries to the value of $3,758,000; silk and silk goods, $3,832,000; watches, $940,000; cheese, $619,000; cotton goods, $563,000; hats, bonnets, and material, $279,000; together with jewels and jewelry, musical instruments, colors and dyes, leather and leather goods, woollens, etc., to the total value of $11,450,000.

The same year the imports from the United States, credited mostly to the ports through which they passed in transit, amounted to only a little more than $17,000.

is followed in some sections, and wool is exported. Iron, lead, silver, copper, sulphur, salt, and coal are mined, but in small quantities.

Carpets and rugs are the only manufactures for which the Turks are famous, and even in these goods the looms of western nations are fast becoming active competitors. The making of "Turkish" towelling, formerly a great industry, is now mainly in the hands of the English.

Constantinople, the capital, the greatest commercial city of eastern Europe, is connected with the west by railway. It carries on trade with nearly all the nations of the world, being greatly favored by its excellent geographical situation. There is also a large caravan trade with western and central Asia; though the caravans now bring mohair, silk, and opium, rather than manufactured products, as was formerly the case. The commerce of the Ottoman empire is in the hands of Greeks, Hebrews, and other foreigners.

Our own trade with Turkey is very small; we import wool, mohair, and oils, returning a small value in kerosene.[1]

Turkey in Asia, known as Asia Minor, or "The Levant," is a high plateau, in the south of which are river-valleys yielding tropical products. The interior is a hilly, grazing country from which Angora and other kinds of wool are exported.

Smyrna, the chief commercial city, possesses a fine harbor, in which vessels of nearly all commercial nations trade. Direct steamship communication is held with various ports of Europe. The caravan routes that terminate at Smyrna have been used for centuries, and over them a great trade is carried on with inland Asia.

The city is purely commercial; and most of the products of the Levant, including fruits, opium, cotton, sponges, oil, and drugs, pass through its warehouses. The only manufactured products of Asia Minor are rugs and carpets. Though called "Smyrna" rugs and "Smyrna" carpets, these goods are made in the interior, and are merely sent to market by way of that city. Imitations of these rugs and carpets are made by machinery in Philadelphia.

Damascus is still the starting-point for many caravans north, east, and south; but most of the foreign trade passes through the neighboring city of Beyrout. The two cities are connected by a fine railway. **Beyrout** is noted for its textile manufactures, which, with a considerable commerce, place it next to Smyrna in trade importance. **Angora,** in the interior, is the shipping-point of the wool of the Angora goat, commonly known as mohair. The trade is very valuable. Most of

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[1] In 1894 European Turkey exported to the United States: Opium to the value of $614,000; wool, raw and manufactured, $541,000; oils, $159,000; together with hides, gum, tobacco, silk, etc., to the total value of $1,657,000.

The imports into Turkey from the United States were $85,000 in value the same year.

the emery used in the arts comes from Asia Minor, and is known as Turkish emery. The United States imports from Asia Minor wool, opium, licorice, fruits, and skins.[1]

IV. THE KINGDOM OF GREECE. — Greece occupies the southern part of the Balkan peninsula. The surface is rugged and mountainous; the coast irregular, elevated, and deeply indented. The adjoining islands are parts of the kingdom. The area, 19,000 square miles, is about twice that of the state of Vermont; the population, 1,700,000, is about equal to that of the state of Indiana.

Half of the population pursues agriculture, and the fruit-crop is important. Currants (raisins of Corinth) are raised in immense quantities, the crop of 1893 being 350,000,000 pounds; while 750,000 bushels of olives are annually produced. Except in fruit-products agriculture is in a backward state. Some raw silk is produced; but this industry, in which Greece once took the lead, has fallen into decay.

Deposits of iron, lead, and zinc exist; but the mines are little developed, though lead forms a considerable export. The celebrated statuary marble from the island of Paros is a minor item of export.

Manufactures are unimportant. The Greeks have been active traders from early times, and to-day they carry on most of the commerce of the eastern Mediterranean region. A ship canal across the Isthmus of Corinth is now in course of construction and its completion will shorten by many miles the sea-voyage from Athens to western Europe.

The bulk of the trade is with Great Britain, France, and Russia. Our own commerce with Greece is very small; it consists of the import of currants, figs, and olives, and the almost exclusive export of a small quantity of kerosene.

Athens is the capital and largest city. **The Piræus,** its seaport, has a fine harbor.

V. NORWAY AND SWEDEN. — The kingdom which is composed of these two countries occupies the Scandinavian peninsula. The Norwegians and Swedes resemble each other in race characteristics, in institutions, and in industries. The peninsula is a mountainous table-land, except in the east and south, where there are lowlands of some fertility.

Sweden has an area of 174,000 square miles, five times that of the state of Maine; and a population, 4,734,000, seven times as great. Half the area is forest-covered, and a large share of the timber of European commerce comes from this peninsula. Grazing and cattle-raising are extensively followed, and dairy-products

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[1] In 1894 the exports from Asia Minor to the United States were: Licorice-root, $651,000; wool and manufactures of wool, $530,000; opium, $467,000; figs, $234,000; together with raisins, iron ore, etc., to the total value of about $2,204,000.

The imports into Asia Minor from the United States in 1894 were: Distilled spirits, to the value of $60,000; cotton cloth, $26,000; and other articles, to the value of $106,000.

are the exports next in value. There are extensive iron-mines, and the product is of fine quality. Manufactured goods have little variety, the best known being Swedish matches, which are sold the world over. A canal across the southern part of the peninsula connects the Baltic with the North Sea, and is of great commercial value to the kingdom. Sweden imports textiles and cereals, and exports timber and metals.

The only important industrial towns are **Stockholm,** the capital, and **Norrkoping.** **Götheburg** is the principal seaport.

Norway has an area of 122,000 square miles, about four times that of the state of Maine; and a population of 2,000,000. There are very extensive forests; and lumber, chiefly fir and pine, is the leading export. The fisheries of herring, cod, and whale provide the next export in value. Copper is mined. Ship-building is the only industry of importance, and in proportion to population the Norwegians have a larger shipping-tonnage than any other nation. Norway imports cereals, and exports fish and lumber.[1]

Christiania, the capital, is the principal seaport.

VI. DENMARK. — Denmark occupies the peninsula of Jutland, north of the German Empire, together with the adjacent islands. The area is but little greater than that of Massachusetts, Rhode Island, and Connecticut together. The population is 2,130,000, — nearly a million less than that of the three states mentioned. The surface of the country is low, being less than 600 feet high at the highest point, yet it is nowhere below the sea-level.

About half the people live by agriculture, a quarter are employed in factories, and the rest in trade and the fisheries. A considerable part of the country is covered with forests. Beech is almost the only species of timber, and articles made of the wood of this tree form a considerable export. No minerals are found; and except a small amount of fine china-ware, no manufactured articles of importance are exported.

Grazing is an important industry, and the products of the dairy exceed the products of the soil in commercial consequence. Three-quarters of the imports

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[1] In 1894 the Scandinavian kingdom exported to the United States: Iron and steel goods to the value of $1,302,000; wood pulp, $719,000; fish, $534,000; oils, $93,000; together with books and works of art, hides and skins, and other products, to the total value of $3,112,000.

The imports from the United States during the same year were: Cotton, $1,166,000; beef and pork products, $991,000; breadstuffs, $542,000; refined oils, $510,000; leather, $468,000; together with tobacco, fertilizers, butter, and other products, to the total value of $4,355,000.

come from Germany, England, and Sweden; and nearly all of the exports go to these countries, live-stock and dairy products forming the greater part.[1]

Copenhagen, the capital, has an excellent harbor. It is the chief commercial city and largest industrial centre of the kingdom.

The colonial dependencies of Denmark are **Greenland** and **Iceland,** and the islands of **St. Croix, St. Thomas,** and **St John,** in the West Indies. None of them is of much commercial consequence. Greenland exports cryolite, — a mineral used in making soap-soda, — alum and cryolite glass, skins and whale-oil; Iceland exports eider-down, Iceland moss, stock-fish, and sulphur; the Danish West Indies export sugar and molasses.

VII. AUSTRIA-HUNGARY. — This empire is situated in the east-central part of Europe. The area, 260,000 square miles, is about equal to that of the state of Texas; and the population, 37,000,000, is about equal to that of France. The emperor of Austria is also king of Hungary. More than half the area is mountainous. In the northeastern part are the plains of Hungary, forming about a third of the area: here cereals are grown in abundance. An equal area is forest-covered; and oak, pine, and beech lumber form a considerable export. The other more important exports are cereals and beet-sugar. Vine-culture and fruit-raising, especially of prunes, are extensively carried on in the high country. Generally speaking, the eastern part of the empire is devoted to agriculture, while in the western part manufacturing interests predominate. Rich deposits of iron and coal in the northwest have greatly stimulated industry. Both minerals are exported; and the chief industries are button-manufacture, iron-manufacture, linen, cotton, wool, and jute spinning, glass and paper making, and sugar-refining. With respect to mineral resources, the country is perhaps the richest in Europe, yielding gold, silver, salt, and petroleum. The Danube River, with its tributaries, drains nearly all the country; and, as the more important of these tributaries are navigable for small vessels, they form valuable highways of commerce. In connection with them is an efficient railway system, in part owned or operated by the government. The railways provide close intercourse with neighboring nations, especially with Germany.

Austria has a small coast on the Adriatic Sea; but there are only two ports of any importance, — **Trieste** and **Fiume.** These ports have considerable commerce; that of the latter is increasing, since it affords an outlet for the cereals and timber of Hungary. More than half the trade of the empire is by railway with Germany.

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[1] In 1894 Denmark exported to the United States: Paper-stock to the value of $16,000; oils, $12,000; works of art, $5,000; together with vegetables, wool, books, maps, and engravings, etc., to the total value of $194,000.

The imports into Denmark from the United States the same year were: Corn, $1,500,000; beef and pork products, $1,194,000; wheat and wheat flour, $835,000; refined oils, $309,000; oil cake and meal, $263,000; butter, $112,000; fertilizers, $111,000; together with seeds, iron and steel products, leather, cotton, molasses, tobacco, and other products, to the total value of $5,046,000.

Vienna, the capital of the empire, with a population about equal to that of New York City, is the most important city of Austria. It is situated on the Danube, at the head of navigation, and thus controls a large water-traffic. It is a great railway and industrial centre; the chief manufactures are of silks, machinery, and beer.

Prague is the commercial centre of Bohemian industries. These are woollen and hardware manufactures, and glass-making, for which latter industry the Bohemians have long been famous.

The twin city of **Buda-Pesth** — Buda being on the west bank, and Pesth on the east bank of the Danube — is the capital of Hungary. It is the centre of Hungarian commerce, and has many flour-mills. Most of the grain, cattle, and wine trade of the kingdom centres here.

The United States imports from Austria-Hungary buttons, fruits, drugs, and glassware. The exports of the United States to this country are of little value.[1]

VIII. PORTUGAL. — Portugal lies west of Spain, and borders on the Atlantic Ocean. Its surface characteristics and its productions are similar to those of Spain. The area, 34,000 square miles, is about equal to that of the state of Maine; and the population, 4,700,000, closely corresponds with that of Sweden, or of Canada. The people are dependent chiefly upon agriculture, and wine is the most valuable product. Fruits are next in value; and this product includes oranges, lemons, citron, figs, and olives. Fishing is an important industry, and sardines and herring are a considerable export. Minerals are found in variety, and some copper is exported. Manufactures are not very important: they consist in the main of fabrics of cotton, silk, and wool, besides pottery, and leather goods, chiefly gloves. Speaking generally, Portugal buys food-products and raw textiles, and sells cork, silk, and wine.[2]

Lisbon, the capital, at the mouth of the Tagus, is the chief commercial city. **Oporto,** the only other seaport of note, is famous for its "port" wine. The last-named city has some manufactures of textiles. The Portuguese colonial dependencies in Asia and Africa are of great prospective importance. In Africa are the **Cape Verde Islands,** on which St. Vincent is a fine coaling-station; the **Madeira Islands,** celebrated for their wine, and a resort for tourists; the **Azores,** which export

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[1] In 1894 the exports from Austria-Hungary to the United States were: Sugar to the value of $1,412,000; glassware, $720,000; stone and china ware, $564,000; flax, hemp, and jute, $519,000; wood and its manufactures, $328,000; vegetables, $310,000; together with drugs and chemicals, fruits, jewelry and jewels, leather goods, silk goods, and other products, to the total value of $6,896,000.

The imports into the empire that year from the United States were: Cotton seed and other oils, $216,000; rosin, $70,000; together with cotton, turpentine, and other products, to the total value of $526,000.

[2] In 1894 Portugal exported to the United States: Cork, $818,000; rubber, $808,000; wines, $123,000; drugs and chemicals, $67,000; together with fish, iron and steel manufactures, salt, and other products, to the total value of $2,030,000.

During the same year the imports from the United States were: Breadstuffs, $4,124,000; lumber, $320,000; cotton and its products, $284,000; oils, $243,000; together with tobacco, rosin, iron and steel products, jute goods, clocks, and other articles, to the total value of $5,194,000.

great quantities of oranges and pine-apples; the island of **St. Thomas,** which exports cinchona and coffee; besides extensive areas on both the east and the west coast.

In Asia are three small colonies on the west coast of the Indian peninsula; a portion of **Timor,** and the port of **Macao** on the south side of the estuary at the mouth of the Canton River, not far from the city of Hong Kong.

QUESTIONS

What are the comparative area and population of Russia? What is the nature of the surface? What natural advantage has retarded the construction of railways? What disadvantages to agriculture in the north? — in the southeast? — in the interior? What section is specially fertile? In what agricultural product does Russia lead the nations of Europe? What are the more important manufactures? What mineral products can you name? Where are the petroleum fields of Russia? Give some account of the situation, industries, and commerce of St. Petersburg, — of Archangel, — of Odessa, — of Moscow, — of Warsaw, — of the situation and trade of Riga, — of the manufactures of Lodz, — of Kief. What important town on the Caspian Sea? Where is the world's greatest fair annually held? What principal products are here interchanged? With what countries is the bulk of Russian commerce carried on? What are the main exports and imports? What do we buy from Russia? What great engineering-work will connect St. Petersburg with the Sea of Japan? What is the principal export of Siberia? What seaport is the eastern terminus of the projected Siberian Railway?

Describe the situation of Switzerland. What are its comparative area and population? — the chief agricultural products? What natural advantage partially compensates for the lack of coal deposits? What are the more important manufactured products? What is the nature of most of the imports? — of most of the exports? What do we mainly buy of the Swiss? In whose favor is the balance of trade? [*Ans.* — It is largely in favor of Switzerland.] How have Swiss manufactures of silk been greatly benefited? What city is the centre of the watch-making industry? — of the textile industries?

Describe the situation and surface of Turkey. What is the principal export? What minerals are found? For what especial manufacture are the Turks noted? What are the situation and trade of Constantinople? What can you say of our own trade with Turkey? What is the principal city of Asia Minor? What special advantages for commerce has Smyrna? What products are exported here? For what is Damascus commercially important? — Beyrout? — Angora?

What are the comparative area and population of Greece? What are the most important products of this country? What mineral forms a considerable export? With what country is the bulk of Greek trade carried on?

What two nations occupy the Scandinavian peninsula? What are the comparative area and population of Sweden? What product is the principal export? What ore is extensively mined? What is the capital? — the principal seaport? What are the comparative area and population of Norway? What product is the leading export? What can you say of the shipping tonnage of Norway? What are the main imports of Sweden? — of Norway?

What are the comparative area and population of Denmark? How are the Danes subdivided as to occupations? With what countries is most of the commerce of Denmark carried on? What colonial dependencies can you name? What are the exports of each?

What are the situation, area, and population of Austria-Hungary? What is said of the surface? What natural product forms a large export? Name other leading exports. In what section of the empire does agriculture predominate? What mineral deposits in the northwestern part? Name the chief industries of the empire. What great navigable river traverses the country? Name two seaports of Austria. Locate and describe Vienna, — Prague, — Buda-Pesth. What are the leading items of our imports from Austria-Hungary?

What are the situation, area, and population of Portugal? What is the most valuable product? What products are next in value to that of wine? Summarize the foreign trade of Portugal. Where is Lisbon? What can you say of Oporto? What African colonies of Portugal can you name? — what Asiatic colonies?

CHAPTER XVI.

OTHER NORTH AMERICAN COUNTRIES

I. THE CENTRAL AMERICAN STATES. — Central America, the southern extremity of North America, is a little larger than California, and comprises the five republics of Guatemala, Honduras, Salvador, Nicaragua, and Costa Rica, and the British colony of Balize, or British Honduras.[1] The inhabitants are mainly Indians and mixed races; most of the whites are of Spanish descent. The greater part of the interior is a table-land of moderate height. The Pacific coast is mountainous; the eastern coast low and marshy.

Guatemala is the northernmost of the republics. By far the most valuable product and export is coffee; sugar, hides, indigo, rubber, and fruits follow in order. *San Jose* and *Champerico* on the Pacific are the chief ports. *New Guatemala*, the capital, is a city of 60,000 people. The total population of the republic is about 1,200,000.

Honduras is centrally situated with respect to the other states. The exports consist chiefly of fruits, cattle, mahogany, hides, rubber, coffee, and sugar. The mineral wealth of the country is but little developed. There is a short strip of coast-line on the Pacific, but the greater part of the republic stretches along the Caribbean Sea a distance of 400 miles. *Tegucigalpa* is the capital and largest city. The total population of the republic is less than half a million.

Salvador is the only Central American state having no Caribbean coast. The people are devoted to agriculture and mining. Indigo, coffee, sugar, balsam, and silver are exported. The total population is about 600,000. The old capital, San Salvador, is surrounded by active volcanoes, and has been abandoned for another site called *New San Salvador*. Though the smallest of the five central American republics, Salvador ranks second in point of population.

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[1] In 1894 these five republics exported products to the United States to the total value of $9,769,000, in the following proportion: Salvador, $2,926,000; Costa Rica, $2,287,000; Guatemala, $2,225,000; Nicaragua, $1,564,000; Honduras, $765,000. Coffee was the largest item, amounting to $7,304,000, of which Salvador shipped nearly $3,000,000; Guatemala and Costa Rica following with $2,000,000 each. Bananas amounted to $1,256,000, of which Nicaragua shipped nearly half. Rubber amounted to $526,000; and other products were hides, sugar, drugs and dyes, cocoanuts, and lumber.

The imports into the five republics the same year were: To Guatemala, $1,664,000; Salvador, $1,072,000; Costa Rica, 1,002,000; Nicaragua, $935,000; Honduras, $558,000; aggregating, $5,231,000.

Nicaragua is the largest in area of these republics, and has an extensive seacoast on both east and west. The central part of the country is a great fertile plain. Many rivers flow to the sea from this plain, but the San Juan is the only one that is navigable. Much of the public income is derived from the monopoly of the exports of tobacco and gunpowder. Cattle-raising and the collecting of rubber are the chief occupations of the people. There are few exports, that of coffee being the most important. *Greytown*, on the east coast, and *San Juan* on the west coast, are the chief seaports. *Leon*, the former capital, and the largest city, is situated on the Pacific. *Managua*, the new capital, is situated upon the lake of the same name. The total population of Nicaragua is about 300,000.

Costa Rica is the southernmost of these republics. Its most valuable product is coffee. Exports of fruits and tobacco are increasing yearly. *San Jose* is the capital. The total population of Costa Rica is 200,000.

II. THE ISLAND OF HAITI. — This island, which is inhabited mainly by negroes, is divided into two republics — **Santo Domingo** in the eastern, and **Haiti** in the western part. The island has about the same area as Maine, and a population of nearly a million. The exports are chiefly tropical woods, coffee, cotton, sugar, and cocoa.[1]

Port au Prince, the capital of Haiti, has a population of 35,000; that of *San Domingo*, the capital of Santo Domingo, is about 15,000.

QUESTIONS

What can you say of the situation, area, surface, and population of Central America? What is the situation of Guatemala? What are its chief products and exports? Name the Pacific ports of Guatemala. What is the capital? What is the approximate population of the republic? Where is Honduras? What are the chief products? What is the capital? What are the leading industries of Salvador? — the exports? What is the population? What is the capital? Describe Nicaragua, its situation, surface, and products. What are the chief exports? Name the principal seaports. What is the capital? Where is Costa Rica? What is the most valuable product of this republic? What exports can you name? What is the total population of the country? What two republics in Haiti? By what race is the island peopled? What are the leading exports? Name two considerable towns on this island.

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[1] In 1894 Santo Domingo exported to the United States: Sugar to the value of $2,876,000; coffee, $71,000; logwood, hides and skins, and other products, to the total value of $3,200,000. The imports from the United States during the same year were: Cotton goods, $300,000; flour, $167,000; iron and steel goods, fish, bags, provisions, lumber, and other products, to the total value of $1,769,000.

In 1894 Haiti exported to the United States: Logwood valued at $759,000; hides and skins, $11,000; and other products, to the total value of $840,000. The imports from the United States in the same year were: Meat products, $1,500,000; flour, $732,000; fish, $650,000; cotton cloth, $578,000; together with lumber, tobacco, soap, dairy and other products, to the total value of $5,743,000.

CHAPTER XVII.

OTHER SOUTH AMERICAN COUNTRIES

I. VENEZUELA. — Venezuela borders on the Caribbean Sea; Guiana bounds it on the east, Brazil on the south, and Colombia on the west. The greater part of the republic lies in the basin of the Orinoco River. The area, 439,000 square miles, is about twice that of Germany, and the population, 2,198,000, is equal to that of the state of Missouri. Political disturbances have retarded the development of the country, and progress has also been checked by government monopolies granted upon certain native products, and on the right of steam navigation upon Lake Maracaybo. Inland, and at present beyond the reach of commerce, are great forests, extensive grazing areas, and a very fertile agricultural country. Concessions have been made for the building of railways, and these are giving great impetus to the industries and commerce of the interior.

Agriculture is the leading occupation, and cattle-raising is extensively carried on upon the llanos of the Orinoco. The gold-fields, though not yet very productive, are among the richest in the world. Coal exists in considerable quantities; and iron, copper, asphalt, petroleum, silver, tin, and salt abound. Within the last few years, owing to the increased development of the vast natural resources of the republic, the foreign commerce has quadrupled. The exports of greatest consequence are coffee and copper; subordinate items are hides, dyewoods, cocoa, and timber. Most of the trade of Venezuela is with our own country, Germany, and France. We buy of Venezuela principally coffee, and sell to her in exchange foodstuffs, cotton goods, and iron and steel manufactures.[1]

Carácas, the capital, is the principal cocoa-market. *Valencia* exports coffee. *Maracaybo* is the chief seaport. When Columbus visited this region he found the native settlement on Lake Maracaybo built upon piles, whence the name Venezuela, "Little Venice."

II. THE ARGENTINE REPUBLIC. — This republic occupies the southeastern portion of the continent of South America. The area is about one-third that of the United States; the population is estimated at four millions. There is a large and

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[1] In 1894 Venezuela exported to the United States: Coffee, $2,689,000; hides and skins, $496,000; cocoa, $91,000; together with copper and copper ores, rubber, feathers, etc., to the total value of $3,464,000.

During the same year the imports from the United States were: Meat and dairy products, $974,000; flour, $800,000; cotton cloth, $580,000; iron and steel goods, $538,000; together with a variety of other goods to the total value of $4,137,000.

rapidly increasing immigration, chiefly from Italy and Spain. The republic is a pastoral country. Sheep-ranges cover a vast area.[1]

Among the minerals known to exist are silver, copper, gold, coal, salt, and sulphur; but the output of these is as yet quite small. The coal-fields, though undeveloped, give promise not only of furnishing sufficient coal for home needs, but of providing an article of export to the neighboring republics.

There is railway communication between Buenos Ayres, the capital, and all the important cities of the country. The railway system between Buenos Ayres and Valparaiso, nearly completed, promises to be one of the greatest trunk lines, not only of South America, but of the world, as it saves the long and dangerous voyage of nearly 2,000 miles around Cape Horn.

After the absorption of Patagonia by Chili and the Argentine Republic, it was found that its supposed barren wastes are interspersed with fertile valleys, fine pastures, dense woods, and every requisite for the support of a large population.

The chief articles of export in the order of their value are wool, hides, skins, corn, preserved meats, live animals, flax, tallow and fat, and wheat. We buy of the Argentine Republic wool, hides, and skins; and in exchange sell lumber and manufactures in great variety.[2] Thousands of tons of jerked beef are yearly shipped to Brazil and other neighboring countries. From 1880 to 1887 the commerce of the republic more than doubled, being in the latter year of greater value in proportion to the population than that of any other country in the world. The natural advantages of the Argentine Republic are very great, and everything points to its future commercial importance.[3]

There are many small seaports, but two-thirds of the foreign trade of the country is done through *Buenos Ayres*. This is the most energetic and progres-

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[1] In 1893 there were 45,000,000 sheep in the United States, 118,000,000 in the Australian Colonies, and 80,000,000 in the Argentine Republic. In the same year there were 22,000,000 horned cattle, and 5,200,000 horses in Argentine. The value of the pastoral industries of this republic in 1893 was estimated at $105,000,000.

[2] In 1894 the Argentine Republic exported to the United States: Hides and skins to the value of $2,291,000; wool, $780,000; and a few other articles, to the total value of $3,497,000.

The imports from the United States during the same year were in great variety, of which mowers and reapers amounted to $1,206,000; wood and its manufactures, $1,083,000; iron and steel goods, $579,000; twine, $342,000; together with cotton cloths, oils, etc., to the total value of $4,862,000.

[3] If any portion of the Western Hemisphere has a possibility of rivalling the United States in commercial energy, resources, progressiveness, and enlightenment, it is the Argentine Republic. It has many of the natural resources of the United States, great extent of plains where wheat, corn, and other grain can be raised far in excess of the home demand, almost unlimited forest area of the choicest cabinet and building woods, and evidences of valuable deposits of minerals. The adjoining republic of Paraguay, which is a feeder and tributary to the Argentine Republic, has a large area that will produce sugar, cotton, rice, and other semi-tropical products in abundance.

Explorations have demonstrated the great value of the Patagonian accession in the south, both for raising grain and for grazing; while the farther north the republic pushes its frontier — settlers following close behind — the more fertile and productive the soil is found to be. The better part of this northern area can be reached by waterways, and where these do not exist railways are being rapidly extended. Three-fourths of a million of emigrants from Europe have settled in the republic

sive of the cities of South America. It is situated on the River Plate, about one hundred miles from its mouth, and the roadstead is an open one for the entire distance. Nearly opposite is Montevideo, in Uruguay, a city more advantageously situated, yet of much less commercial importance. By means of a submarine cable there is telephonic communication between the two places. More than twenty steamship lines connect Buenos Ayres with important ports in Europe. The population is nearly half a million. The River Plate is formed by the junction of the Parana and the Uruguay rivers, and the Parana River is often spoken of as the Plate throughout its course.

III. COLOMBIA. — The republic of Colombia is situated at the northwestern extremity of South America. It includes the Isthmus of Panama as far north as the boundary of Costa Rica. Its area, 500,000 square miles, is nearly twice that of Texas; the population is estimated at 4,000,000. Much of the surface is mountainous; in the southeast are extensive plains.

Agriculture is the predominating industry. The principal products are tobacco, cocoa, coffee, plantains, bananas, wheat and other cereals, vegetable ivory, and indigo. Cattle and horses are reared on the plains, and large quantities of hides and jerked beef are produced. The forests are extensive. Among the trees are mahogany and cedar, fustic and other dyewoods, and medicinal plants. The mineral productions are gold, silver, platinum, copper, iron, lead, coal, and precious stones.

The chief exports are cinchona, coffee, nuts, silver ore, cocoa, cotton, dyestuffs, balsams, hides, rubber, and straw hats. The chief imports are clothing and foodstuffs. Of far more importance than the direct commerce is the transit trade passing between the two ports of Panama and Colon, by way of the Panama railway. It is here, and following mainly the line of this railway, that the futile and ruinous scheme of an interoceanic canal, projected under French auspices, reached its disastrous conclusion in 1888. The principal means of communication between the interior and the sea is the Magdalena River, which is navigable by steamers. The chief exports by this route are Peruvian bark, tobacco, and coffee.

Panama is the principal seaport and the Pacific terminus of the isthmian railway; *Colon*, or Aspinwall, is its Atlantic terminus. *Bogota*, the capital and chief

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during the last ten years, and the immigration is increasing yearly. A few years ago much of the wheat used was imported. Now wheat is among the exports, and enters into competition with that of the United States. Nearly enough sugar is raised to supply the home demand, and in five years sugar should be a considerable export. The same is true of various other products of the soil. Beef and mutton are shipped in quantities to Europe.

In 1891 there occurred a financial panic that dealt a severe blow to the prosperity of the country, and one that will be felt for many years. The immediate cause of the crisis was the withdrawal of Russian guarantees that had been given to secure loans advanced by a syndicate of capitalists. The real cause, however, was a state of unparalleled political corruption brought about by speculation in fictitious values.

city, is situated on a lofty plateau, and is consequently healthful, though but a few hundred miles distant from the equator. *Barranquilla*, on the Magdalena River, and connected by a railway with *Savanilla*, a seaport twenty miles distant, is commercially important — nearly all the foreign trade of the republic passing through it.

Our own trade with the republic of Colombia may be summarized as follows: We buy coffee and hides, and sell manufactures and food-stuffs.[1]

IV. CHILI. — Chili extends along the west coast of South America from Peru to Cape Horn, and is walled in on the east by the great chain of the Andes. Its area, nearly 300,000 square miles, is about twice that of the state of California; the population is estimated at 2,500,000.

Northern Chili has a desert-like surface, and would be of little value but for the deposits of guano and nitre,[2] and for its mines of gold, silver, and copper, in the mountainous regions back from the seacoast. The nitrates form the most important article of export to the United States. The middle part of the republic is the most populous, and is the agricultural section; the southern part is sparsely inhabited and covered with dense forests. The population of this country, unlike that of most other South American states, consists mainly of people of European descent. Most of the land of Chili belongs to large estates, and its cultivation is carried on by the rudest methods. A large proportion of the soil is unproductive; yet where it is capable of tillage, it yields abundant crops. There are extensive coal-mines, and Chili supplies coal to most of the other republics of South America. The north is rich in nitre and guano, the centre in copper and silver, and the south in iron and coal.

The exports in the order of their value are copper, silver, wheat, nitrates, and guano. The leading imports of Chili consist of clothing, food-stuffs, and machinery. The United States buys nitrates and hides, and in exchange sells manufactured goods.[3]

Santiago is the capital, and *Valparaiso* is its port. The latter city is built at the side of a steep cliff which forms a crescent around the bay, the business portion

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[1] In 1894 the exports from Colombia to the United States were: Bananas, $559,000; coffee, $443,000; hides and skins, $438,000; cocoanuts, $308,000; together with vegetable ivory, cocoa, rubber, and other products, to the total value of $2,234,000.

During the same year the imports from the United States were: Manufactures of iron and steel, $485,000; wheat flour, $406,000; meat and dairy products, $246,000; together with lumber, sugar, books, maps, and engravings, and other articles, to the total value of $2,784,000.

[2] The nitre deposits consist chiefly of sodium nitrate, only a small quantity of potassium nitrate being found. These deposits are commercially spoken of as "nitrates."

[3] In 1894 Chili exported to the United States: Nitrate of soda to the value of $2,763,000; wool, $109,000; together with hides, drugs, etc., to the total value of $3,536,000.

The imports from the United States in the same year were: Iron and steel goods, $690,000; cotton goods, $462,000; kerosene and other oils, $277,000; lumber, 207,000; together with agricultural implements, meat products, sugar, medicines, and other articles, to the total value of $2,272,000.

being on the shore. *Iquique*, farther north, is the port from which most of the products of the northern part are exported. A railway connects the two cities.

The Biobio is the only river of any importance, and is navigable for small steamers for one hundred miles. It waters a fine territory. Chili has liberal immigration laws, and is one of the most active and energetic states of South America. She recently joined with the Argentine Republic in the partition of Patagonia, and, by her recent war with Peru and Bolivia, has added largely to her area and wealth. The civil war, which occurred in 1891, proved a severe blow to the prosperity of the country.

V. URUGUAY. — Uruguay, south of Brazil, and east of the Argentine Republic, is the smallest of the South American republics. The area, 72,000 square miles, is about twice that of the state of Indiana; the population, 600,000, is about equal to that of the state of Connecticut. There are few Indians among the inhabitants, the people being chiefly descendants of the original Spanish settlers, together with Italians and other European immigrants.

The republic is fortunately situated for commerce, having more than 600 miles of water-front on the Atlantic coast and on the Uruguay and Plate rivers. The surface is a vast grassy plain, diversified by low swells of land in the interior. The country is well watered, and the climate is not unlike that of southern France. Fruits and vegetables are grown in great abundance and variety. The chief wealth of the country, however, centres in the grazing interests; and the exports of beef, hides, and wool are of great importance. The agricultural resources are unsurpassed. It is said that there is not an acre of unproductive land in the republic. The most important field-products are wheat and maize. There are several agricultural colonies in the country, composed mainly of Italians and Spaniards. The forests yield a plentiful supply of useful timber.

Trade is carried on mainly with Great Britain and France. The principal manufacture for export is beef and the extract of meat. The Liebig Beef Company has a vast business on the Uruguay river, and consumes a million head of cattle a year. The leading imports are of liquors, and manufactured goods in great variety. We buy of Uruguay hides, wool, and hair, and sell in exchange lumber, kerosene, and manufactured products.[1]

Montevideo, the capital and largest city, is situated upon a tongue of land which is washed on one side by the Atlantic, and on the other by the River Plate, which is

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[1] In 1894 Uruguay exported to the United States: Hides to the value of $1,162,000; fertilizers, $91,000; hair, $66,000; together with other products, to the total value of $1,419,000.

The imports into Uruguay from the United States in the same year were: Kerosene and other oils, $208,000; lumber, $156,000; cotton goods, $129,000; together with farm tools, drugs, cordage, rosin, lard, tobacco, etc., to the total value of $1,015,000.

here sixty-five miles wide. The harbor is the best south of Rio de Janeiro; most of the trade of the republic passes through this port.

By reason of its natural advantages in climate, geographical position, and soil, Uruguay has a promising future. The River Plate drains an area of more than a million square miles, and, with its tributaries, affords more navigable waters than all the rivers of Europe together. The tide from the Atlantic extends a distance of 250 miles, and there is a depth of water sufficient for vessels of deep draught for a thousand miles into the interior. The population of the republic has doubled within a few years, and much of the prosperity of the country is due to the fact that the native population has largely given place to energetic foreign immigrants.

VI. ECUADOR. — Ecuador lies on the Pacific coast, between Colombia and Peru. The area, 250,000 square miles, nearly equals that of Texas; the population is estimated at a million, more than half of it consisting of Indians. Agriculture is in a backward state. Cocoa is the staple product. The minerals comprise gold, sulphur, lead, iron, copper, and emeralds. Extensive forests afford timber suitable for ship-building and cabinet-work. In the highlands saddles and a coarse earthenware are made; gold lace and filigree work are produced in Quito. The manufacture of "Panama" hats is a leading industry; cordage, mats, sackcloth, and hammocks are made from the fibre of the maguey, a species of agave.

The roads are very poor, even in the dry season, and during the several wet months of the year are impassable. Freight and merchandise are transported by pack-animals. There are two short railways from the coast to the interior.

Trade is carried on chiefly with Great Britain. Cocoa is the principal export; rubber, hides, coffee, vegetable ivory, barks, precious metals, and Panama hats, are also articles of traffic.[1]

Quito, the capital and largest city, is nearly on the equator, at an altitude of about ten thousand feet. *Guayaquil* is the principal seaport. The so-called Panama hats are made here — the name coming from the fact that Panama merchants formerly controlled their sale. Guayaquil is the only place of much importance, and most of the shipments of cocoa, rubber, hides, and bark pass through this port.

VII. PERU. — Peru is situated on the Pacific coast, south of Ecuador, and west of Brazil and Bolivia. Its area is estimated at 400,000 square miles; the population is about 2,500,000, of which the great majority are Indians and half-breeds. Along the coast the country is low. The lands lying to the eastward of the Andes are very fertile, and will be opened to enterprise and trade by the completion of railways and irrigation works now projected. The ocean cable on

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[1] In 1894 Ecuador exported to the United States: Cocoa to the value of $282,000; india rubber, $274,000; coffee, $247,000; with other products, to the total value of $816,000.

In the same year Ecuador imported from the United States a variety of articles amounting to a total value of $761,000, of which lard was the chief item of $254,000.

the coast has stations at Payta, Callao, and Lima. Peru is intersected by the head waters of the Amazon, which afford it communication with the Atlantic.

The chief exports are guano, nitre, sugar, Peruvian (cinchona) bark, wool, both from sheep and from the alpaca goat, and ores. Our own trade with Peru is very small.[1]

It was a dispute over the nitrate beds that led to the war with Chili, which resulted disastrously to both Peru and Bolivia. When the independence of these republics was first obtained, Bolivia had a barren strip of seacoast. When, however, the nitre beds were discovered and their value demonstrated, Chili asserted her ownership to them under an ancient claim. Bolivia and Peru had treaties, offensive and defensive; and the latter unsuccessfully defended Bolivia's claim. Peru was bankrupted and demoralized by the ensuing war with Chili. The importance of the port of Callao has lessened; and where hundreds of vessels formerly anchored, now hardly a dozen are found. A French company holds a monopoly of the anchorage, wharves, and shipping-rights, and has so oppressed commerce as to drive it away.

Lima is the capital and chief centre of trade and wealth. It is connected with *Callao*, its seaport, by railway. Some of the largest and finest business houses in Lima are owned by Chinese merchants, who have the monopoly of trade in certain textile goods. A New York firm controls most of the foreign trade of the country.

VIII. PARAGUAY. — Paraguay lies between Brazil and Bolivia and the Argentine Republic. From the latter it is separated by the Paraguay and Parana Rivers. It is one of the smallest states of South America, and, like Bolivia, has no seacoast. The area is estimated at 90,000 square miles, and the population at about a quarter of a million. The southern part of the country is low and swampy. A large part of the northern section is covered with forests, comprising a great variety of timber. The mineral resources are imperfectly known, but iron and copper have been found in several places.

Paraguay has every advantage that nature can afford, and needs only development to become of great commercial importance. Its pastures support vast herds of cattle, and fruits in great variety are grown. New regions are being opened by immigrants, and sugar-culture is growing in importance. The state has been greatly crippled by a civil war, from the results of which it is now slowly recovering.

The manioc root, from which the tapioca of commerce is produced, is the staple diet of the people. This is to Paraguay and Brazil what rice is to China and Japan, and potatoes to Ireland. The plant grows to a height of four feet and resembles the tomato. The stalk and leaves, when dried, serve as fodder for cattle.

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[1] In 1894 Peru exported to the United States: Hides and skins to the value of $211,000; cotton, $166,000; and other articles, to the total value of $491,000.

In the same year Peru imported from the United States: Farm tools, breadstuffs, chemicals, cottons, and other articles, to the total value of $591,000.

The principal export is the *yerba maté*, or Paraguay tea, made of leaves of the ilex-tree, dried and reduced to powder. This tea is a mild stimulant, and is extensively consumed in other countries of South America. Paraguay tobacco, a poor article, and hides, are other exports. About half the total imports of Paraguay are derived from Great Britain, and consist mainly of machinery and clothing.

Asuncion, the capital, is situated on the Paraguay River. *Villa Rica* and *Concepcion* are other towns of importance.

IX. BOLIVIA. — Bolivia is bordered north and east by Brazil, south by the Argentine Republic and Paraguay, and west by Peru and Chili. It is, therefore, an inland country, its communication with the sea being carried on through the ports of Peru, Chili, and the Argentine Republic. Recent explorations in the upper waters of the Parana, give reason to believe that Bolivia will soon be connected with the Atlantic by means of tributaries of this river, which are navigable for steamboats of considerable draught. Bolivia embraces an area of 800,000 square miles. The population, about 2,000,000 in number, is chiefly of Indian descent.

The surface, a high plateau surmounted by lofty peaks of the Andes in the west, declines to a low, fertile plain in the east.

Bolivia's products are mainly mineral, though there are several natural products from the forests. The India-rubber is of the finest quality, and almost inexhaustible. Cocoa is one of the most important products. The plant from which it is derived is raised in the valleys of the Andes and exported to a considerable extent. The cinchona tree, from the bark of which quinine is produced, was first discovered in Bolivia. Of late years it has been found in the forests along the entire chain of the Andes. Efforts have been made to transplant the cinchona-tree into Java, Ceylon, and India, and with such success, that the best quinine now comes from these countries. The result of the East Indian competition has been to reduce the price of quinine more than half.

Bolivia is very rich in minerals. With only the most primitive methods of mining, the silver-mines of Potosi are estimated to have produced $2,000,000,000 since their discovery. It is said that every ounce of ore that finds its way out of the Andes is carried on the back of a man or a llama, and the quartz is crushed by rolling logs upon it. By this method gold and silver to the amount of nearly $15,000,000 are annually mined. Besides the precious metals, copper, lead, tin, salt, and sulphur are found.

There is now a railway from Mollendo, on the Peruvian coast, to Lake Titicaca, and some of the produce of Bolivia reaches a market by this route. Most of the exports of Bolivia, however, are sent abroad by way of Buenos Ayres. The exports comprise silver, Peruvian bark, rubber, gum, cocoa, coffee, copper, tin, and other ores. Silver forms two-thirds of the value of the exports.

La Paz is the nominal capital and the largest city. *Sucre* is the seat of government.

QUESTIONS

What is the situation of Venezuela? What are its comparative area and population? What can you say of the natural resources of this country? What is the chief industry of the llanos? What can you say of the mineral deposits? Which exports are the more important? What other exports can you name? With what countries is the greater part of the commerce of Venezuela carried on? Summarize our own trade with Venezuela. What is the capital? — the chief seaport? What is the main export of Valencia?

Locate the Argentine Republic. What is its comparative area? — estimated population? From what countries is most of its immigration derived? What mineral deposits are known to exist? What great railway is now in course of construction? In what does the commercial value of this railway line mainly consist? What can you say of the natural resources of Patagonia? What are the main exports of the Argentine Republic? Summarize our own commerce with that country. What striking fact can you name in respect to the recent commerce of the Argentine Republic? Describe the situation of Buenos Ayres. What can you say of its commerce? — of its population?

What is the situation of the republic of Colombia? What are its area and population? What is the nature of the surface? What industry is most important? Name the principal agricultural products, — the forest products, — the mineral products. What are the leading exports? — imports? What great commercial highway crosses Colombia? Name the chief waterway. What commodities are exported by way of the Magdalena River? What is the principal seaport? — the capital? Through what port is most of the foreign trade of Colombia carried on? Summarize our own trade with this republic.

What are the situation, area, and population of Chili? What can you say of its surface in the north? — in the central part? — in the south? What are the products of each of these sections? What minerals does the country yield? Name the leading exports, — the imports. Summarize our own trade with Chili. What is the capital? — the chief seaport? What port on the upper coast?

Describe the situation of Uruguay. What are its comparative area and population? What natural advantages for commerce has this republic? What is the nature of the surface? In what does the chief wealth of the country consist? What are the most important field-products? With what country is most of the foreign trade of Uruguay carried on? What is the leading export? What are the leading imports? Summarize our own trade with this republic. What is the capital and chief seaport? What great river, with its tributaries, traverses the territory of Uruguay?

What are the situation, area, and population of Ecuador? What is the most important agricultural product? What minerals are found? What country absorbs most of the trade of Ecuador? What are the more important exports? What is the capital? — the chief seaport? What are the principal shipments from Guayaquil?

What are the situation, area, and population of Peru? What is the nature of its western surface? Where are the most fertile lands situated? By what means has Peru communication with the Atlantic coast of South America? What are the principal exports of Peru? What causes led to the impoverishment of this republic? What is the capital? With what seaport is Lima connected by railway?

What are the situation, area, and population of Paraguay? Describe the nature of the surface. Where is the forest area? What minerals are found? What crops are of importance? What is the leading export? What other exports can you name? What are the principal imports? What city is the capital?

Describe the situation of Bolivia. Through what countries is its foreign commerce carried on? What are its area and population? What minerals are largely produced? Which of these is the most important? What other products can you name? What are the chief exports? What is the capital?

CHAPTER XVIII.

COMMODITIES IMPORTANT TO COMMERCE

I. — FOOD SUBSTANCES

Beef and Beef Products. — No other species of animal is of so great service to mankind as that commonly known as neat-cattle. From the most remote times these animals have been closely associated with the industries of mankind as beasts of burden, in tilling the soil, and in gathering the harvests. Their flesh serves as one of the chief articles of food for nearly three-fourths of the world's population, while milk and other dairy-products probably rank next after grain and meat in the order of value. Leather, made from their hides, is used in one form or another by three-fourths of the world's population; and the horns, hoofs, and hair are utilized in a variety of ways.

Cattle are reared for different objects. In thickly inhabited countries milk-producing qualities are most desirable, while in grazing countries beef-producing qualities are sought. The cattle interests of the United States are greater than those of any other country.[1] Our dairy interests alone represent an investment of twenty times the bank capital of the country. The number of milch cows in the United States is estimated at 16,500,000, with an average yearly yield of 350 gallons of milk each. The quantity of butter made is nearly 30,000,000 pounds, and of cheese 6,000,000 pounds annually. In 1888 the value of the dairy products was estimated at $500,000,000, — a sum exceeding the value of the wheat crop. The value of the beef, butter, cheese, leather, and other products of beef, exported from the United States, is annually more than $50,000,000.[2] The other chief beef-

[1] The number of cattle slaughtered and dressed for market in Chicago, the centre of the American beef business, was over two millions in 1888.

[2] The magnitude of the export trade in beef is realized by very few. It has increased enormously of late, not only because prices in this country have been low and in England high, but also because new and greatly improved facilities for ocean transportation have been devised. In the three months of June, July, and August, 1889, the exports of live cattle and their value were as follows: —

	NUMBER	VALUE
June	26,195	$2,026,416
July	29,883	2,411,618
August	34,821	2,909,880
Total	90,899	$7,347,914

Averaging about 1,400 pounds each, these cattle represent 127,258,600 pounds of beef, of which about 75,000,000 pounds would be available for food. But this is by no means the whole of our contribution to the world's supply of beef. In the same months the exports of fresh slaughtered beef were 40,441,557 pounds; and the exports of canned, salted, and other cured beef,

producing countries are the Argentine Republic and Uruguay. In Europe, dairy products and beef are exported by The Netherlands, Denmark, and Ireland.

Fish. — Fish are found in abundance and variety in nearly all waters, salt and fresh. Commercially, the salt-water fisheries are of much the greater value, and the important ones are few in number. The Banks off the coast of Newfoundland and Nova Scotia are the most prolific fishing-grounds, and are yearly visited by about 5000 vessels. The largest fleet of these vessels hails from the United States. The other countries represented are Canada, Great Britain, France, and Norway. The fishing-banks next in productiveness are those north of Norway, and in the vicinity of Iceland. The north Pacific Ocean, in the vicinity of Alaska and the island chains, also contains valuable fishing-grounds. The Japanese have a considerable fleet in the northwestern part of this ocean, but along the American coast fishing is less vigorously pursued. Within two years, however, many vessels have been added to the fleets sailing from San Francisco, Puget Sound, and British Columbia.

Codfish, the most abundant of salt-water food-fishes, are caught on all great banks, as are also halibut. Mackerel are caught in the north Atlantic near the shore. These three species are the only salt-water fishes of great commercial value. The young of the herring and menhaden are caught in abundance on the coast of Maine, and canned as "sardines." Red-snappers, croakers, and shrimp are taken in the Gulf of Mexico. Shad and salmon are salt-water fish that run into fresh water to spawn. Shad abound in the rivers of the Atlantic slope, and salmon in the rivers of the Pacific coast. The leading salmon-fisheries of the world are along the Columbia River and the numerous rivers of Alaska. Salmon abound also in Okhotsk Sea; but these fisheries are not developed.

In Europe cod, halibut, haddock, and herring are the leading fish. Sardines are caught off the coast of France, Spain, and Portugal, and near the islands of the Mediterranean Sea.

Other salt-water live products are oysters, clams, and lobsters. The most extensive shell-fish beds in the world are along the coast of the United States. Chesapeake Bay is the principal seat of oyster-dredging; but there are valuable beds on the coasts of New England, Long Island, and New Jersey, and in the Gulf of Mexico. Large beds of oysters have been planted on our Pacific coast. In Europe most of the oysters come from the coasts of France and Holland. Lobsters are caught along the coasts of New England and Canada in North America, and of Scotland, Ireland, and Norway in Europe.

The inland fisheries of many countries furnish valuable food supplies; but,

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amounted to 33,086,585 pounds. In all, the weight of beef shipped abroad, live, slaughtered, and packed, exceeded 200,000,000 pounds in three months. The large supplies of fresh beef formerly drawn from New York, Pennsylvania, and Ohio, come to market no longer; but instead, the supplies for eastern cities and for export are mainly drawn from far western states and territories. This is because, as the value of land rises, it becomes unprofitable to employ it in cattle-raising, especially in competition with the beef from the far west, shipped at the low rate prevailing during recent years.

owing to the fact that the fish cannot be transported far, they are of little commercial value. In the United States the whitefish of the Great Lakes are of considerable commercial consequence. The sturgeon of the Volga River in Russia are the most important product of the inland fisheries of Europe.

Fish-culture is now carried on by nearly all leading nations, and valuable food-fish from one part of the world are transported to other parts and planted in exhausted fisheries.

The value of the annual product of the fisheries of the United States is more than $50,000,000. The most important are the general sea-fisheries, the oyster-fisheries being next in value. The annual products of the fisheries exported from the United States are more than four millions of dollars in value, canned salmon representing nearly one-third of this amount.

Pork and Pork Products. — Swine have always been a source of food supply in Europe and Asia. In warmer countries the flesh is not considered wholesome. In Europe the raising of swine is confined mainly to Great Britain and the Balkan states. But rearing swine and curing pork is a greater industry in the United States than in any other country. Owing to the fact that our staple crop, Indian corn, affords the best food for these animals, American pork is superior to that of Europe, as it makes the flesh harder. The leading pork-producing states are, Iowa, Illinois, Ohio, Missouri, Kansas, Indiana, Nebraska, and Texas. For the year ending March 1, 1894, the number of hogs packed in Chicago was over four millions; in Kansas City, nearly two millions; while the total number packed and marketed in the country was more than sixteen millions.

The value of the exports of hog-products from the United States in 1893 was $80,000,000. This includes bacon, ham, salted and pickled pork, lard and lard-oil.

Barley. — Barley was formerly used for food in northern countries, where it was supposed that wheat would not grow. But wheat has very generally superseded it, both as a crop and as a food; and barley is now mainly used in the brewing of malt liquors. For this purpose it is steeped in water and then fermented, being thereby converted into malt. Barley is cultivated in the western part of the United States, and forms a small export. Germany, England, and Austria, the chief brewing countries of the world, consume most of the barley of commerce.

Cocoa. — The cocoa-tree, grows mainly in America, to which continent it is indigenous. Cocoa is an important article of commerce in the Spanish American nations, the United States, and Spain. In its various forms the products of this tree are called nibs, shells, cocoa, chocolate, broma, etc. The greatest consumers of the beverages made from the cocoa-seed are the Spanish and Portuguese, who have long preferred them to either coffee or tea. The manufacture of chocolate is an increasing industry in France, from which country our own supply of this product is chiefly derived. We take cocoa, shells, and leaves from South America and the West Indies to the annual value of about $2,000,000.

Coffee. — Coffee was in use in Arabia long before it was known in Europe. But since its introduction to the commercial world, 200 years ago, its consumption has enormously increased. Its growth is limited to a few countries. A century ago coffee-growing was introduced into Brazil, and half the world's supply now comes from that country. Java ranks next in the amount produced. The rest of the supply comes from Ceylon, Abyssinia, Arabia, the West Indies, Liberia, and Central and South America.

The best variety is grown in Yemen, a province in Arabia of which Mocha is the capital; and the coffee derives its name from that city. The product of Java stands next in favor; but nearly all of the "Mocha" and much of the "Java" coffee consumed in the United States come from Brazil.

Coffee is not grown in the United States, yet this country consumes more than any other nation. The average annual importation is about 550,000,000 pounds, an amount greater than that used by Austria, France, Germany, and Great Britain together. The total consumption in the United States is over nine pounds *per capita*. Two countries of Europe, The Netherlands and Belgium, show even a larger consumption *per capita* than this. Of the coffee used in the United States, Brazil furnishes sixty-nine per cent.

Fruits. — The introduction of steamship navigation has made the interchange of fruit-products among nations a very important branch of commerce. Oranges are raised chiefly in the West Indies, Florida, California, Spain, Italy, and Asia Minor; lemons, in Italy, Spain, the West Indies, Florida, and California; pine-apples, in the West Indies, Mexico, and Central America; bananas, in Central America, tropical South America, the West Indies, and Mexico; figs, in Asia Minor, Turkey, Florida, and California; dates, in northern Africa and Arabia; prunes and plums, in Austria, France, Turkey, and Italy; and grape-raisins, in Spain, France, Turkey, and California. Owing to the perishable nature of the commodity, traffic in many small fruits is limited to adjoining countries. In 1894 the United States imported fruits and nuts to the value of nearly $20,000,000.

The apples of commerce are shipped mainly from the United States, though Canada has some trade in this fruit. In 1894 the value of apples and canned-fruits exported from the United States was $2,500,000.

Maize. — Maize, or Indian corn, is the leading food-crop of the United States, and, with the manufactures from it, is of great commercial value. This cereal requires a warmer climate than wheat, and is therefore raised chiefly in the states south of the wheat-growing belt. Corn is the main food-supply of the people of Mexico, Central America, and South America, and is an important element of diet in southern Europe, as well as in the United States. Besides entering directly into the food-supply of many nations, corn is largely used in fattening cattle and swine for market, its fattening properties exceeding those of any other grain. It also enters into the manufacture of alcohol and alcoholic liquors, starch, and glucose. Corn-starch is a common article of diet in the United States, and is extensively

exported. The Kingsford factory at Oswego, New York, produces 25,000,000 pounds of starch annually. Glucose, or "grape" sugar, is largely used in making confectionery, and various food-products in which sweetening is required. Much the greater part of the Indian-corn supply of the world is raised in the United States.

Potatoes. — The potato is cultivated in nearly every part of the civilized world, and is an important reliance for food to the mass of people in Germany and Ireland. In most other European countries, as well as in the United States and Canada, it is also used to a very great extent.

Except in a year when the crop of some consuming nation is a failure, this tuber is of but little commercial value. In 1887, when the crop in the United States was small, potatoes were imported to the value of over $3,500,000, most of the supply coming from Canada, Scotland, and England.

In the warm and in equatorial regions a species called the "sweet potato" is extensively raised. This and a similar tuber, called the yam, are a considerable export when the crop is harvested, but they keep only a short time.

Common potatoes are much used in the manufacture of starch. Like maize, the potato is indigenous to America; but it is now cultivated in all civilized lands; and its comparative consumption is greater in some European countries — notably in Ireland and Germany — than in our own.

Rice. — Rice, the main food-supply of most of the inhabitants of Asia, is a staple article of diet for a greater number of people than any other food-product. In the commerce of the more advanced nations, however, it plays a comparatively small part, since it is not used largely as food either in Europe or North America. Rice is grown to greater perfection in South Carolina, Georgia, North Carolina, Louisiana, and Mississippi than in Asia; yet most of the world's supply comes from China, the East Indies, Corea, and Egypt.

Sugar. — Sugar is an article of great commercial value, and in the past century has received more attention than any other vegetable food-product. The greatest source of supply has always been the sugar-cane of the East and the West Indies. Sugar is a constituent part of nearly all vegetable products. By careful cultivation of a variety of beets called the sugar-beet, the amount of sugar in them has been greatly increased. The latter grows in a more temperate climate than that required by the sugar-cane, and is raised to great perfection in continental Europe.

The annual sugar product of the world approximates 5,000,000 tons, over half of which is made from the beet. Germany leads in the production of beet-sugar, and is followed in order by France, Belgium, Austria, Russia, and The Netherlands. The sugar made from cane is slightly more soluble than that made from the beet, and hence has a sweeter taste. By governmental patronage and a system of bounties, beet-sugar has grown to be an important rival of cane-sugar. The more important cane-sugar regions are Cuba, Java, Brazil, Egypt, the Philippine

Islands, Peru, India, the United States,[1] and the Hawaiian Islands. The sugar is extracted from the cane in the country where it is grown. The crystalline part of the extract is the raw sugar of commerce, and the liquid part is the molasses. In the United States most of the sugar-refining, or manufacture of white sugar, is done in Brooklyn, Philadelphia, Boston, and San Francisco.

The consumption of sugar in the United States is about 1,500,000 tons a year. Of this amount more than two million tons is imported, of which Cuba furnishes about one-half. The rest comes chiefly from other islands of the West Indies, from the Hawaiian Islands, and from Brazil. Louisiana is the only state in the Union in which sugar-cane to any considerable amount is grown. The manufacture of beet-sugar has received much encouragement in California, and has become an active industry. Our government has experimented with sorghum for several years, but it is yet a question whether sugar can profitably be made from the sorghum cane. The making of glucose, or "grape-sugar," from corn is an active industry in the United States. Sugar is made in New England, New York, and parts of Canada from the sap of the sugar-maple, but the crop is small and of but little commercial consequence.

An important industry connected with the growing of sugar-cane is the manufacture of rum. This spirit is obtained by distilling fermented molasses.

Tea. — Tea was introduced into Europe about three hundred years ago, and has now become an important article of commerce. China produces a large part of the world's supply. The other tea-producing countries are India, Japan, Java, and Ceylon. India is fast assuming importance as a tea-growing country, and in 1888 furnished more tea for the English market than did China. Attempts have been made to introduce tea-culture into South America, Australia, South Africa, and the United States, but with little success.

There are two leading kinds of tea and several grades of each kind. Black tea comes from China and India, while green tea comes from Japan and to a limited extent from China.

Australia, Great Britain, and Russia are the three greatest tea-consuming countries; and in these countries the use of coffee is decreasing. In the United States there is an increasing consumption of coffee and a decreasing consumption of tea. The importation of tea into the United States is about 96,000,000 pounds a year, nearly all of it coming from China and Japan.

In several South American states a kind of tea called Paraguay tea, or *yerba maté* is used. It is an important article of traffic in South America, particularly among the native population.

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[1] There is prospect of a considerable extension of sugar-making in Florida now that much rich sugar-land is being reclaimed by drainage. The average crop of Louisiana is about 100,000 tons, but there are sugar-lands in the state sufficient to double or even triple this production. Texas has many thousand acres of fine sugar-lands, and is rapidly developing this industry. Kansas is increasing her sorghum product under government patronage, and California already produces beet-sugar. Before the present century closes an enormous increase is promised in the sugar production of the United States, but it will still probably be far below the consumption.

Wheat. — Wheat is the food grain of the more civilized nations of the world, and the leading grain crop of Europe. It grows in almost any climate except the hot belts, but it reaches the greatest perfection in those parts of the Temperate Zone where the summers are very hot and the winters cold. The rich soil and rigorous climate of the northern half of the United States and the southern part of the Dominion of Canada provide the best conditions for raising this grain, and more than a quarter of the world's supply is grown in this territory. The other leading wheat-producing sections of the world are the rich plains of Russia north of the Black Sea, Austria-Hungary, the Balkan states, France, and India. Wheat is also grown in Germany, Denmark, England, and Australia, but not in quantities sufficient to supply the home demand.

The quantity of wheat raised to the acre is dependent largely upon the weather; but the average productiveness of the northwestern states of the Union is far in excess of that of other wheat-producing countries. While the Dakotas, Minnesota, and Illinois produce from fifteen to twenty bushels to the acre, Russia and the Balkan states produce from six to ten, India about the same quantity, but of inferior quality, and Australia from three to eight bushels to the acre.

The international trade in wheat and wheat-flour now far exceeds that in any other vegetable food-product, and in fact is only surpassed by that in raw and manufactured textiles. It may be generally stated that wheat is bought by the nations of western Europe, and sold by the United States and Russia.

II. — TEXTILE SUBSTANCES.

Cotton. — Cotton is the most important of all the vegetable fibres. The cotton plant is found on all the continents, but the American plant produces the most valuable fibre. The annual product of all the cotton-growing countries is about 10,000,000 bales, the average weight to the bale being 440 pounds. Two-thirds of the supply come from the United States; the rest from the East Indies, Egypt, Brazil, the West Indies, and Turkey.

Cotton, as grown in the United States, is of two kinds, — the "sea-island," which has a long fibre and grows on the islands off the coast of Georgia, Florida, and South Carolina; and "upland," which grows on the mainland. Nearly all the cotton of commerce is upland, and this is divided into a dozen or more distinct qualities. Sea-island cotton is too expensive for general manufacture. Nearly all the cotton product of the United States is grown in Mississippi, Georgia, Texas, Alabama, Arkansas, South Carolina, Louisiana, North Carolina, and Tennessee.

In the manufacture of cotton, Great Britain leads all other nations; the United States ranks second, Germany third, and France fourth. But while the number of spindles is not increasing in Great Britain, the reverse is true of the United States. During the past quarter of a century the export of raw cotton from the United States has averaged nearly $300,000,000 in value a year.

Flax. — Flax is a vegetable fibre from which much of the cloth of the world was made until the great expansion of cotton-growing in the United States. Cotton fibre is more easily gathered, requires no bleaching, and is, therefore, cheaper; it has generally superseded flax in use. The process of preparing the plant by which the fibre is made ready for manufacture is elaborate and expensive. The stalk is first softened and rotted so as to separate the bark; then by a slow process the fibre is removed. This, made white by bleaching, is the linen of commerce. Flax is grown chiefly in Russia, Germany, Austria, Italy, France, Belgium, Ireland, The Netherlands, and to a small extent in Canada and the United States. The spinning and weaving of linen is carried on almost entirely in Great Britain, Germany, and France. Belfast, in Ireland, is a great centre of the linen-spinning industry. In the United States a variety of flax is grown also for the seeds, which are used in making linseed-oil.

Hemp. — Hemp fibre is coarser than flax. It is very strong, and is used in making cordage. Two-thirds of the supply used in the United States come from the Philippine Islands. In 1894 the total import of hemp and other coarse vegetable fibres for making cordage and similar articles aggregated in value nearly $14,000,000.

Sisal grass, or sisal hemp, sometimes called hennequin, is the leading crop of Yucatan, and forms an important export to the United States. The trade in this article has increased from a few thousand dollars to over $5,000,000 annually. This grass is used in making cordage, hammocks, and similar articles.

Jute. — Jute is a coarser fibre than hemp or flax. It is grown mainly in India, and is largely manufactured there. The principal use of jute is for making very coarse cloth called "gunny," or burlaps. The cloth is used extensively in commerce for protecting articles from wear, and, when made into bags, for carrying commodities, which are thus more conveniently handled than in bulk.

From this fibre a coarse kind of paper is also made. Its various manufactures are largely developed in Scotland, Dundee being especially celebrated for this industry. A large part of our own supply of jute manufactures is derived from Scotland. We import but little jute fibre, having nearer at hand a cheaper and better article for the same uses in sisal hemp.

Silk. — Silk was first introduced into Europe from China, where silk-worms have been carefully reared for centuries. This culture has been extended into Italy, Japan, India, France, Russia, and elsewhere; but half the world's supply of silk still comes from China, where the industry is more skilfully carried on, and the other countries named depend largely upon China for silk-worm eggs.

Silk is extensively manufactured in China, Japan, and India, and the goods are exported; but the exports of raw silk from these countries is much more important. France is the leading silk-manufacturing country of Europe; and Lyons, the centre of the industry, is the chief silk-market of the world. Germany ranks next to

France in this manufacture, Crefeld being the most important centre of it there. The chief Lyons product is dress-goods, while that of Crefeld is silk velvet. The United States stands third as a silk-manufacturing nation, and New York and New Jersey are the leading states in this industry. The product is mainly sewing-silk, ribbons, and handkerchiefs, though the manufacture of dress-goods and velvets is rapidly increasing. Silk cloth is very generally worn in China and Japan, but there are no statistics by which a comparison can be made between the manufactured product of these countries and that of western nations.

In 1894 raw silk was imported into the United States to the value of $16,000,000 — more than half of it coming from Japan. The importation of manufactured silk during the same year was about $25,000,000.

Wool. — Sheep are raised in nearly every country, flourishing best where the climate is temperate and pasturage ample. Wool-growing is most extensively carried on in Australia and New Zealand. Russia stands second as a wool-growing nation, the United States third, and the Argentine Republic fourth. Wool is the largest agricultural export of Great Britain, but the greater part of the wool of commerce comes from Australia, New Zealand, Russia, and the Argentine Republic, in which countries the fibre is but little manufactured; while in the United States wool is very extensively manufactured, and the home supply, though very large, does not equal the demand. Australian wool goes almost wholly to Great Britain; Argentine wool is sold to the United States, Belgium, and Germany.

Great Britain is the leading wool-manufacturing nation. France is second, the United States third, Germany fourth, and Austria-Hungary fifth. The manufacture of wool in the United States has its principal seats in New England, New York, and Pennsylvania; the leading sheep-raising states are California, Oregon, Ohio, Illinois, Michigan, New Mexico, and Texas. Usually the wool is clipped from the sheep once a year, but in California and other warm sections there are two clips annually. The yearly production of wool in the world amounts to about 2,000,000,000 pounds, and of this the United States consumes nearly one-fourth.

Several other kinds of wool besides that of the sheep are used in making fabrics. The silky wool of the Angora goat, used for very fine and costly fabrics, comes chiefly from Asia Minor, though the Angora goat has been introduced into South Africa and Australia. This wool, which is called mohair, is woven in Persia into choice shawls, and in France, Great Britain, and elsewhere, into shawls often made in imitation of the Persian product. The wool of the Cashmere goat, from the Himalaya region, is of two qualities; the finer fibre being separated from the coarser by hand. The former is the finest quality of wool grown, and is exported to Europe in small quantities. It was first made into shawls at Cashmere in northern India, whence the name. The wool of the alpaca and the llama is exported to some extent from the west coast of South America, chiefly from Peru. Alpaca wool is used in weaving some of the finer grades of dress-goods.

III. — METALS

Copper. — Next to iron, copper is the most useful of metals. It is found both in its pure state and in combination with other minerals. Numerous copper-mines exist in Europe, the more important being in Spain and Germany; but the discovery of rich deposits in other parts of the world has almost entirely changed the source of supply. Three-sevenths of the world's copper come from our own country. The richest and most productive mines in the United States are in Montana and in Michigan, along the shores of Lake Superior. There are other very valuable deposits in Utah, Arizona, and New Mexico. Copper is also produced in Chili, Japan, and Australia.

In electric conductivity this metal is almost equal to silver; and, being much cheaper than silver, the recent increase in the uses of electricity has greatly stimulated its production. Copper is used for sheathing ocean vessels, for covering roofs, for numerous domestic purposes, and as an alloy, not only with gold and silver, but also for making brass, which is the most extensively used of all alloys. It is likewise a component element in bronze, bell-metal, gun-metal, and other compositions.

Valuable substances are obtained from copper by chemical operations, among them verdigris, Paris green, and other coloring substances; blue vitriol, used for electrical purposes and in the arts; and copper paint, which, owing to the cheapness of the substance, is used on the bottoms of coasting-vessels instead of sheathing.

Gold. — Gold is one of the few metals that is found in a metallic form. As it usually occurs, it is imbedded in quartz, except where the action of water or other elements has separated it. It is found in all parts of the world; but two-fifths of the world's supply have come from the United States and Australia, and about nine-tenths of the annual product now come from the United States, Russia, and Australia.

Gold forms the basis of the coinage of nations. It is also extensively used in the arts, especially in the making of jewelry and the setting of jewels. It is softer than most metals, very ductile, and so malleable that it may be beaten into leaves $\frac{1}{200000}$ of an inch in thickness. When used in coins and other manufactured articles, gold is mixed with silver, copper, or other metals, to give it a greater degree of hardness. Some of the finest and most delicate colors are chemical combinations of gold, particularly those colors which are used in glass and porcelain decoration.

Gold is extracted from the ore by crushing the rock and then agitating the finely pulverized ore with water and quicksilver. The latter dissolves the gold, uniting with it to form an amalgam. The foreign matter is washed away, leaving the two metals. The quicksilver is then separated from the gold by distillation, and is ready to be used again.

In 1848 the discovery of gold in California caused a rush of people from all parts of the world to that state, and the amount of gold mined there has reached over $1,000,000,000 in value. Three years later gold was discovered in Victoria,

Australia; and the product of the mines of Australia, New Zealand, and Tasmania has aggregated an equal amount.

Iron. — Iron is the most widely distributed and extensively used of the metals. It is found in nearly every part of the globe; but four-fifths of the world's supply come from the United States, Great Britain, and Germany. The United States, in addition to the vast domestic production of iron, imports iron and steel and their products to the value of about $20,000,000 annually. The greater part of this is derived from England. The United States buys iron ore from Spain; wrought iron, cast-iron, rails, iron wire, and wire rods from England and Germany; and bar-iron from Sweden and Norway, England, and Germany.

The annual export of these is rapidly increasing in value.[1] No metal is found in such varying quality as iron, the quality being graded by the amount of other minerals existing in the ore. The metal is rarely found in its pure state. The most abundant and workable ores are the oxides and carbonates, the former being the most plentiful and valuable. Iron combined with sulphur is one of the most common of all metal ores; but it is used only in making sulphuric acid.

To extract iron from the ore, coal and ore are put into the blast furnace together with a varying amount of limestone. Under the intense heat the iron separates from the ore, melts, and collects at the bottom of the furnace, while the other elements of the ore form a slag with the limestone. The latter is light, and floats on the molten metal. This operation is called smelting. The molten iron drawn off from the furnace is the pig-iron of commerce. A "pig" is intended to be a load for one man, and weighs about one hundred pounds. The product of the iron-regions is reckoned in the amount of this pig-iron.

There are three ways in which refined iron can be manufactured: first, by remelting and pouring into moulds, thus forming cast-iron; second, by reheating pig-iron and forging or rolling it, making malleable, or wrought iron; and third, by refining the pig-iron, and then combining with it from one to one and a half per cent. of carbon, thereby making steel. Cast-iron contains four or five per cent. of carbon, and is brittle and easily broken. Malleable iron is practically free from carbon, and is tough and elastic. In chemical composition steel has a position between cast and malleable iron. It possesses many valuable properties, however, that as iron it did not have.[2]

Steel can be tempered to give it almost any degree of hardness, toughness, or elasticity according to the use to be made of it. The virtues of steel were known to the ancients, as is shown by the Damascus sword-blades, which cannot be equalled

[1] In 1888 the iron and steel goods exported amounted to $10,000,000. In 1894 the export reached nearly $30,000,000 in value. The imports of like goods decreased from $40,000,000 in 1888 to $20,000,000 in 1894.

[2] A recent statistician estimates that a bar of iron worth $5 becomes worth $10 when made into horseshoes; $55 when changed into steel and made into needles; $3,285 when made into penknives; $29,500 when made into buttons; and $240,000, or more than its weight in gold, when made into watch-springs.

to-day. Until the invention of Sir Henry Bessemer the process of making steel was expensive and required two weeks or longer.[1]

Much of the progress of the world in mechanical and labor-saving contrivances is due to the great adaptability of iron for a multitude of uses; but steel, weight for weight, is of greater strength and durability, and has superseded iron for many purposes. Articles made of steel require less metal than would be needed were they made of iron, and they are consequently lighter. Since the cost of making it has been so greatly reduced, steel has taken the place of iron in many uses, especially in those in which the material is subject to great wear. Car wheels and rails, the hulls of ocean-going ships, and agricultural implements — all formerly made of iron — are now very largely made of steel.

The United States, Great Britain, and Germany make nearly all of the world's supply of steel.[2]

Lead. — Lead is found combined with other substances, usually with sulphur, this mineral being known as galena. Spain was formerly the chief lead-producing country, but of late years the United States has furnished the largest quantity of this metal. Much of this is found associated with silver ore; the rest, a relatively small amount, comes from the lead-producing districts of the Mississippi valley. The most productive lead-mines in the world are in Illinois and Colorado. Very rich deposits are also worked in Wisconsin, Iowa, and Missouri. In the Missouri mines zinc is found combined with the lead. Owing to the extent to which silver-mining is carried on, Colorado produces immense quantities of lead, nearly all the silver found in the state being combined with lead. This metal is also a considerable product of Germany and Great Britain.

Lead is very malleable, and is easily rolled into sheets; but it possesses very little tenacity. It is so soft that it can easily be cut with a knife. When subjected to heat in the presence of air, lead is converted into an orange-colored powder commonly known as litharge. This is used for making certain pigments, and in glass-making. White lead, which is the basis of most paint, is produced from this metal by chemical process.

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[1] The old process for reducing the amount of carbon in the metal to the required percentage necessitated great care, and was tedious. By the Bessemer process all the carbon is first removed from the metal, then the necessary amount of carbon is added. The time needed for converting the iron into steel is thus reduced from two weeks to fifteen minutes. The steel is made in bottle-shaped iron vessels called converters, each of which holds from five to ten tons. After the steel is formed in the converter, the molten metal is poured into heavy iron moulds, and the ingots of steel thus formed are either sold to manufacturers of steel articles, or, as is often the case, transferred to another part of the mill and rolled out into rails for railways, or into other merchantable forms. In a large rolling-mill the iron from the smelter may become a steel rail ready for use in two hours.

[2] In 1892 the United States, Great Britain, and Germany produced 20,566,000 tons of pig-iron. The United States produced the largest amount, and Great Britain next. The other nations in the order of their product were France, Russia, Austria-Hungary, Belgium, Sweden, and Spain, to the total amount of 26,000,000 tons. In the production of steel in 1892 the United States, Great Britain, and Germany produced 10,500,000 tons, the United States being first, and Great Britain second. The rest of the world produced 2,298,000 tons; the countries in the order of their product being France, Austria-Hungary, Russia, Belgium, Sweden, Italy, and Spain.

Nickel. — Nickel is one of the less abundant minerals. It is found to a small extent in various parts of the United States, the most productive mine being near Lancaster, Pa. Deposits of the ore are worked in New Caledonia, Norway, and elsewhere. In Europe it is combined with copper and zinc, forming the alloy known as "German silver." This alloy is also made in the United States, but by far the greater part is used in plating iron and brass articles. Nickel-plating is an American invention, and nickel-plated wares are produced to a much greater extent here than in any other country. In the United States, Germany, and a few other countries, an alloy with this metal is used in coins of small denomination. It is also used in the manufacture of glass, in the decoration of pottery, and in other arts and manufactures.

Quicksilver. — Quicksilver, or mercury, is sometimes found in the metallic state, but it usually occurs in combination with sulphur. In this form it is known as cinnabar, the artificial form of which is the pigment known as vermilion. This metal is largely employed in the United States in extracting gold and silver from the crushed ore. Until within about forty years the supply was entirely imported. There are several extensive deposits of cinnabar in California; and the mines of New Almaden, named after the region in Spain, produce the chief supply. Quicksilver is now exported by the United States Until the discovery of the mines in California the world's supply came from Spain, and Idria in Austria.

Quicksilver is used in the manufacture of mirrors, thermometers, barometers, and similar instruments. Its salts are used in medicine.

Silver. — Silver is rarely found in its pure state. It usually occurs in combination with other minerals. In the great Comstock lode in Nevada, gold is associated with the silver. In twenty-five years the mines of this lode produced these metals to the value of $300,000,000. The discovery of the New World led to the development of mines of both the precious metals; but the production of silver increased in a much greater ratio than that of gold, and for the past fifty years silver has been growing cheaper. In 1840 the value of silver was one-sixteenth that of gold; in 1880 it had decreased to one-twentieth.

A large proportion of the world's supply of silver has come from the mines of Mexico, Peru, and Bolivia. The mine that has furnished the greatest amount is near Potosi, in Bolivia, and it is estimated to have produced metal to the value of $2,000,000,000. Since the development of the mineral wealth of the western part of the United States, our own country has become the chief silver-producing nation; and more than one-third of the world's supply now comes from the United States, Colorado and Montana being the two leading states in the yield of the metal.

Aside from its use in the coinage of nearly every nation, particularly in the making of small coins, silver is very extensively employed in manufactures and in the arts. The process of depositing a thin coat of silver on the surface of some cheaper metal has led to the manufacture of an enormous amount of plated-ware for household and other purposes.

The United States imports silver ores to the value of about $6,000,000 annually, nearly all of it from Mexico.

Tin. — Tin is the only metal of value that is not produced in quantity in the United States. Deposits of it exist in the Black Hills and in San Bernardino County, California; traces of it have also been found in several other places. Hitherto, nearly all of the tin used in this country has been imported. The mines of Cornwall in the southwest of England have furnished much of the world's supply of tin, and are still quite productive; but the richest tin-mines in the world are on the islands of Banca and Billiton, south of Indo-China, and in Australia. The centre of the tin-trade is Singapore, where the product of the mines of Banca and adjoining regions is shipped to market. Owing to the development of our canning industries, the United States is the greatest tin-consuming nation. Tin is mainly employed in coating thin sheets of iron to protect the latter from rust. Tin itself is too expensive to be used in sheet form. Tinned iron is largely employed for household utensils, for roofing and other purposes, as well as in the canning industries. A large part of our iron imports from Great Britain is classed under the head of "tin." Tin enters into the alloys known as pewter, bronze, type-metal, and britannia.

Zinc. — Zinc is a hard, tough metal, capable of withstanding considerable heat, and not easily corroded. It is produced chiefly in Germany. Belgium is second in the amount of zinc mined, and the United States third. Great Britain and France produce small amounts. In the United States, this metal is found mainly in Missouri and Kansas; it is usually combined with lead and sulphur. Valuable deposits are worked in New Jersey and eastern Pennsylvania.

Zinc is rolled into sheets, and in this form is much used to protect surfaces exposed to heat. Deposited in thin layers over sheet-iron it becomes the galvanized iron of commerce. Zinc and copper are combined to make brass.

Subjected to intense heat in the presence of air it oxidizes, forming the zinc white of commerce. White paint made from this powder is superior in some respects to white lead.

IV. — OTHER MINERAL SUBSTANCES

Building-Stone. — Building-stone abounds in nearly every part of the world. Three kinds are in general use: granite, sandstone, and limestone. The *granite* used in the United States comes chiefly from the great quarries in Massachusetts at Quincy and Cape Ann; and to a less extent from Maine, New Hampshire, Rhode Island, Virginia, North Carolina, South Carolina, Tennessee, Texas, and California. Granite is abundant in Scotland, and quarrying it is a considerable industry. The best-known and most extensively used *sandstone* is commonly known as brown-stone. It is quarried at Portland, in the Connecticut valley, and in New Jersey in the neighborhood of Belleville. Other varieties of sandstone are found in nearly every state, Ohio leading in the amount produced. *Limestone*, the crystalline form

of which is called marble, is found in abundance and in beautiful colors in Vermont, Tennessee, Georgia, North Carolina, Missouri, and Iowa.

Slate is a rock resulting from altered clay. It has numerous uses, and is found in Pennsylvania, Vermont, Maine, and New York. Some of the most extensive slate-quarries in the world are in Wales.

Clay and Clay Products. — Clay is one of the most abundant and useful of minerals. It is converted into brick, terra-cotta, china, and porcelain by working, moulding, and baking. Different qualities of clay are used for making different articles. Brick and terra-cotta work are made from coarser grades which usually contain iron, the latter giving the reddish color to the product. Common heavy chinaware is made from better grades of clay, while porcelain is made from the finest and purest white clay, called kaolin. In the manufacture of china and porcelain a small proportion of lime is combined with the clay to complete the chemical change brought about by baking. Pottery is very durable, and will withstand a great amount of heat.

It is estimated that the brick and terra-cotta product of the United States amounts in value to $50,000,000 yearly. Beds of clay are so universal that the cruder forms of the manufactures of clay are produced in nearly every country; but the manufacture of porcelain, china, and art-pottery, is limited to a few countries.

The finest porcelain is made in and near Dresden in Germany, at Sevres in France, in Worcestershire in England, and to a limited extent in China, Japan, and the United States.

Most of the common chinaware of commerce, often called stoneware, is made in England. Germany and Austria-Hungary rank next in the amount produced. This ware is also made in the United States, chiefly in New Jersey, New York, Pennsylvania, and Illinois.

Large quantities of artistic pottery are made in Worcestershire, and elsewhere in England, to be shipped to all parts of the world. New Jersey is the seat of much of this industry in the United States, Trenton being famous for its pottery products. In Cincinnati a kind of ware called Rookwood pottery is manufactured.

Coal. — Coal is one of the most valuable of mineral substances. It has been used as fuel for about three centuries; but its great value has been demonstrated only within the past fifty years, with the development of steam-power in manufacturing. Coal is found in nearly every country; but over four-fifths of the world's supply come from Great Britain, the United States, and Germany. The output of the United States is annually 145,000,000 tons, or nearly as much as that of Great Britain, while Germany produced half as much. Undeveloped coal areas are known to exist in China, Alaska, Russia, Turkey, Japan, Brazil, Mexico, and Canada.

This mineral is found in several forms — the most important being the anthracite and the bituminous varieties. Bituminous coal yields much gas and tarry oil when heated. In anthracite coal these are wanting, having been driven off

while the coal was in the process of formation; the coal, therefore, gives an intense heat with but little smoke. The amount of manufacturing that can be done in a country, particularly in iron and steel working, is limited by the amount of fuel at hand. In Sweden, where very little coal is mined, but vast forest areas are near by, charcoal is used, instead of coal, in working iron. In most of the great manufacturing nations coal and iron are found together, and manufacture is thus greatly cheapened by the saving in the cost of transportation. Some of the deepest coal-mines in the world are in Belgium, where they have been sunk to a depth of 3,500 feet or more beneath the surface. The limit of deep mining is said to be 4,000 feet. Coal is found in seams or beds, which vary in thickness from a few inches to sixty feet. In Europe these seams are numerous but generally thin; while in the United States the coal-veins are less numerous, but those now developed are thicker and more easily worked. Until the introduction of the steam-engine, mining was limited to shallow excavations, owing to lack of means for keeping mines free from water. The presence of a gas called fire-damp, which is very combustible, and has caused many great disasters, is the chief peril in coal-mining. The use of safety-lamps, through which a flame cannot pass, and the thorough ventilation of mines by means of steam-fans, have greatly lessened the danger from this source.

Coke is extensively made from bituminous coal by heating the coal until the volatile constituents are driven off. It is, therefore, an artificial anthracite, and makes a smokeless fire. Coke is extensively used in smelting metals, particularly in iron- and steel-working.

The gas used for illuminating and heating purposes is made by distilling bituminous coal. This process of distillation also removes the hydro-carbons, commonly called coal-tar. A ton of coal yields about 10,000 feet of gas, and about thirty gallons of this tar. One of the products from the tar is a substance called aniline, which is the base from which many beautiful colors are made; and much of the dyeing of the world is now done with aniline dyes. More than a hundred varieties of dyes are now made in this way, and these have largely supplanted vegetable and animal dyes. Coal-tar and creosote, a distillate from it, are used to saturate piles and other woods used in harbor-structures to prevent the ravages of the teredo, or ship-worm.

Petroleum.—This natural mineral oil is found to a greater or less extent in many parts of the world. Its existence has been known for centuries, and it has been collected from springs and used medicinally. But its commercial value was not realized until the Pennsylvania fields were developed. Its illuminating qualities were then ascertained, and kerosene became the common illuminant of the world.[1]

[1] The strength of lights is estimated by "candle-power." The standard is a sperm candle that consumes 120 grains of spermaceti in an hour. A sixteen-candle gas-burner is estimated to have an illuminating power equal to sixteen of these sperm candles. The illuminating power of a pound of kerosene is equal to that of three pounds of spermaceti. Electric lights are estimated upon this basis, and incandescent lamps are marked 8, 12, 16 candle-power and upwards. This method of computing illuminating power is, however, uncertain and untrustworthy.

The oil-fields were extended by the boring of many wells; and oil, both refined and crude, soon became an important export. The first shipment was in 1862, and from that date there has been an almost uninterrupted increase in the amount. In 1893 the export was nearly 2,550,000 barrels. The total value of the oil sold to foreign nations has been about $1,136,000,000.[1]

The field from which nearly all this oil has hitherto been obtained, extends from western New York, across Pennsylvania, into West Virginia. This field furnishes four-fifths of the world's supply of oil to-day. Petroleum is found also in other parts of the United States. The Lima oil-field, in western Ohio, is very productive; but the oil is of inferior illuminating quality, and is largely employed as fuel in manufacturing. A pipe-line connects the Lima fields with Chicago. Very productive wells are now in operation in southern California.

The richest oil-fields in the world are in Russia, in the region between the Black and Caspian seas. The flow of oil is twice that of the Pennsylvania field; but the present facilities for storing, transporting, and refining it, are inadequate for bringing these fields into commercial importance.

Nearly all petroleum is now transported in bulk. The crude oil is sent to New York, Philadelphia, Baltimore, Cleveland, or Parkersburg by pipe-lines to be refined; and oil is usually shipped in vessels specially provided with tanks for carrying it.

Petroleum as fuel is used in its crude form. For other uses it is distilled. "*Gasolene*," the first and lightest product secured in the refining operation, contains much of the gaseous part of the oil, and is consumed in making gas. *Naphtha*, the next product, is very inflammable, and is used to a limited extent for lighting purposes, more particularly in the open air. *Benzine*, the third product, is much used as a solvent, and in the preparation of paint and varnish. *Kerosene* is made in the next stage of the operation. The law requires that it shall stand a certain test of heat without taking fire. This law varies in different states, but 140° is a standard test. Oil that stands a considerably higher test than kerosene, is called head-light oil, from the fact that it was first made for use in the head-lights of locomotives. *Paraffine oil* remains after these oils have been distilled from the crude petroleum. This is in turn refined, and from it results *paraffine*, from which nearly all the candles of commerce are now made, it having almost entirely superseded tallow, wax, and spermaceti. It also yields an oil which is used for lubricating purposes. The substance skimmed from the oil during the refining process is purified, making *vaseline*. In 1878, while a well was being sunk near Pittsburg, Pa., for petroleum, a reservoir of *natural gas* was struck. A great explosion followed, and when the gas was lighted a column of fire shot into the air. An attempt to utilize this gas as fuel in an iron-mill proved so successful that other wells were sunk, and natural gas was first generally used in Pittsburg, not only in iron- and glass-working, but also for domestic purposes. This gas is inferior for illuminating purposes; but as fuel it gives intense heat, and is very easily regulated. Its particular advantage in glass- and iron-working is due to the fact that it gives off no smoke. Natural gas is found either in connection with petroleum or in a formation similar to that in which petroleum exists. Besides western Pennsylvania, there are fields in which this gas has been developed in western New York, West Virginia, and parts of Ohio and Indiana. Some wells have given a steady flow of gas for years, while others were soon exhausted. In order to keep up the supply, new wells have been bored and new fields opened. This leads to the inferences that the gas is not forming naturally in quantities sufficient to satisfy the demand,

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[1] Kerosene oil goes more generally over the world than any other important product of the United States. There is a growing demand for it in Europe, Asia, Australia, and the Pacific islands.

and that the supply may become exhausted. The United States is the only country in which any considerable industrial use has been made of natural gas.

Asphalt, mineral pitch, or bitumen, is found in southern California, in several parts of South America, and in Europe. The largest supply, however, is derived from the island of Trinidad, where is a lake of it. The principal use of this substance is for paving and the laying of sidewalks. Asphalt results also from the thickening of petroleum through the absorption of oxygen, and it is hence found in layers exposed to the air.

Precious Stones. — The diamond is one of the most costly of precious stones. Most of the supply of this jewel comes from Cape Colony, in south Africa; but a few diamonds are mined in Brazil and India. The stones are sent to Amsterdam, Rotterdam, Antwerp, or London to be cut before being set. Diamond is the hardest substance known, and is exceeded in value by the ruby only. The best specimens are from India and Burmah. Sapphires come from Ceylon, Siam, and Burmah. The topaz is found principally in Brazil, Siberia, Great Britain, and Colorado; amethysts in India, Persia, Siam, the West Indies, and Brazil; emeralds in Peru and the East Indies; and jasper in India and China.

A variety of precious stones has been found in the United States, but the value of the annual product is less than $300,000. The trade in precious stones in the United States is considerable. In 1888 stones and imitations of stones were imported to the value of more than $10,000,000, and set stones and jewelry to the value of more than $1,000,000.[1] The making of imitation "precious stones" is an extensive industry, particularly in France.

Salt, chloride of sodium, is found in solution in sea-water, and in deposits which occur in all parts of the world, being as widely distributed in nature as it is necessary to man. Sea-water is evaporated either by the sun's rays or by artificial heat. In low latitudes and where the climate is dry, natural heat is relied upon. Much of the salt of commerce is produced from sea-water. Turk's Island in the West Indies, and the coasts of Spain and Portugal, supply a large share of this salt. Salt-beds are generally worked by means of borings and shafts into which fresh water is pumped, to be again pumped out and evaporated when saturated with salt. There are great salt-wells in France and in Cheshire, England. Deposits of rock-salt, however, are sometimes excavated. The most famous salt-mines in the world are near Cracow in Austrian Poland. These mines have been worked for centuries, and contain thirty miles of galleries and halls quarried out of the solid salt. There are valuable salt-mines in Germany and France.

In our own country the most considerable salt-wells are those of Syracuse, and of the Genesee region, New York; and those in the vicinity of Saginaw Bay, Michigan. Undeveloped beds of rock-salt exist in Louisiana. On the Pacific slope salt is obtained by the evaporation of sea-water, and also from deposits of rock-salt.

Salt is much used in the arts and manufactures, and in the preservation of foods, especially meat and fish. This mineral is so abundant and widely distributed

[1] In 1894 the total importation of precious stones not set, including uncut diamonds, was $5,411,000 in value. The importation of jewelry and manufactures of gold and silver was about $500,000.

that it plays but a small part in commerce. The world's product of it is estimated at seven million tons a year. Of this Great Britain furnishes more than any other country, and is followed, in their order, by the United States, India, Germany, and Russia. We import salt to the annual value of about a $1,000,000, chiefly from England and Italy. Our annual consumption of this mineral is over a million tons, used mainly in preserving food-products and in the manufactures.

V. — MANUFACTURED PRODUCTS.

Alcohol. — Alcohol is a volatile liquid formed during the fermentation of vegetable juices that contain sugar. In different countries it is made from different substances. The chief sources from which alcohol is derived in the United States are corn and other grains, and potatoes. In Europe alcohol is made from grapes, rice, beets, potatoes, molasses, grain, and various fruits. In Asia rice is mainly used, and the product is known as arrack. Alcohol enters largely into the common beverages of most nations, and its manufacture is thus an important industry. In the arts and manufactures alcohol is of great value, and is used in a variety of ways, especially in making varnishes, medicines, and perfumes, and in preserving animal substances. Alcohol exists to a small per cent. in the fermented liquors, such as wine, cider, beer and ale, and to a large per cent. in the various distilled liquors, such as gin, rum, whiskey, and brandy.

A cheap kind of alcohol, sometimes called wood spirits, is made from wood and other vegetable fibres. Its manufacture is more expensive than that of ordinary alcohol; but not being used as a beverage, it is not taxed, and hence it is cheaper. It is used in the manufacture of cheap varnishes and for similar purposes.

Buttons. — Buttons are of considerable importance in commerce. They are manufactured in the United States, yet the import in 1888 reached an aggregate value of $4,000,000. This importation is decreasing, amounting to about $500,000 in 1894. Buttons are made from a great variety of materials, but chiefly from vegetable ivory, mother-of-pearl, metal, and wood. Wooden buttons are covered with silk or other materials. Many of the buttons of commerce are made in the penal institutions of France and Austria, and are so cheap that much of the world's supply is thus produced.

Dyes. — Until the introduction of aniline coloring matters, nearly all dyeing was done with colors of vegetable or animal origin, and a large traffic was carried on in these dyestuffs which were gathered from all parts of the world. Most of this trade has now disappeared. Previous to the discovery of America the dyestuffs used in Europe were few in number. Several colors were added from American plants.

The chief *red* dyes are madder and cochineal. Madder is a plant raised in nearly all parts of Europe, and in Asia and Asia Minor. Cochineal is the dried body of an insect that lives on several species of the cactus plant. It was originally found in Guatemala and Mexico; but was successfully introduced into the Canary Islands, from which much of the supply now comes.

Blue is produced from indigo. The cultivation of the indigo plant is very extensive in India, and on a smaller scale in Indo-China, Spain, Japan, Central America, and the Philippine Islands. Indigo is one of the most important of dyestuffs, owing to the excellence and permanence of its colors.

The chief *yellow* colors are produced from fustic. This tree is native to Mexico, Brazil, and the West Indies. Fustic logs are exported, and the coloring matter afterwards extracted.

Orange colors are produced from annotto. This is made from the pulp surrounding the seeds of a tree that grows in the West Indies, Mexico, and Brazil. Besides its use in dyeing fabrics, annotto is in demand in all leading dairy countries for coloring butter.

Logwood and nut-galls are the chief dyes to produce *black*. Logwood is the heart of a tree, native to Mexico and Central America, but cultivated in the West Indies. The bark and outside wood are chopped away, and the coloring part exported in the log. Nut-galls are excrescences that grow on many kinds of trees, but more particularly on the oak.

Other dyestuffs are used to a limited extent, and those above enumerated are combined to form other colors. But artificial dyes, especially aniline colors, are increasing in use every year.

Glass. — Glass is a chemical combination of silica with an alkali, such as potash or soda. It is prepared by subjecting the mixture to intense heat, other ingredients being added according to the kind of glass required. Its manufacture is carried on very extensively in England, Germany, Belgium, and France, as well as in the United States. Some of the finest silica, commonly called quartz, used in glass-making, is found in western Massachusetts. It is white, and is pulverized so that it resembles flour. This powder is used for making the purest crystal glass, and is exported to the various glass-making nations of Europe. In England much of the silica is from the Isle of Wight, but the finest silica found in Europe comes from Belgium and from Fontainebleau in France. Glass is very extensively used for domestic purposes, and in the arts and manufactures. It is unaffected by chemicals, except fluoric acid, and is much used in laboratories. When in its melted state glass is easily worked.

Glass-making in the United States has reached a high state of perfection, not only in crystal and cut glass, but in the delicate and beautiful colors of cathedral glass. Considerable amounts of this are exported to Europe.

In Europe, Bohemia in Austria is the greatest centre for fine and cut glass; heavy plate glass is made in Paris and its vicinity, and the cheaper grades of window glass in Belgium, Germany, and England. In the United States most of the cut and art glass is made in Massachusetts and New York, while cheaper grades are manufactured in western Pennsylvania and West Virginia, where natural gas is available for fuel.

The United States imports plate glass from Belgium and England; bottles and vials from Germany; window glass from Belgium; and small glassware from

Austria and Germany — to the annual value of about $7,000,000. Our exports of glass of all kinds aggregate a value of about $1,000,000 a year.

Leather. — Hides, skins, and their manufactured products, enter largely into the commerce of every civilized country. As might be expected, the raw material is exported mainly from countries where the grazing interests are largest; and accordingly the vast region watered by the River Plate, the Brazilian tablelands, the British territories in India and Australasia, together with our own western plains, yield the greater part of the raw hides of commerce.

Hides are converted into leather by a series of processes called tanning, which consists in subjecting them to the influence of tannic acid. This principle is derived from many natural sources, the most important of which is the bark of the hemlock-tree. The location of tanning industries the world over is largely determined by the proximity of forest growths which yield the various tanning-barks. Oak bark is especially valuable for tanning purposes, but its use is comparatively small.

Russia leather derives much of its excellence from the bark of the Russian birch which is used in producing it.

We annually import hides and skins to the value of about $20 000,000; and these come to us largely from the Argentine Republic, Brazil, Mexico, and Colombia, although the goat-skins and ox-hides which we derive from British sources are of great importance. We buy tanned calfskins of France and Germany, and great quantities of skins for morocco from France and Great Britain.

We export sole-leather and upper-leather to the value of about $8,000,000 a year, chiefly to supply the boot-and-shoe factories of Great Britain.

The manufactures of leather, or into which leather enters, are very numerous; but by far the most important of leather products are those of footwear and gloves. In these, as in most other manufactures, Great Britain, France, Germany, and our own country are the leading nations. We buy gloves to the amount of about $5,000,000 annually, taking our supply from Germany and France. We buy upper-leathers to about half that amount from the same countries. Our domestic manufactures in all the forms of leather foot-coverings are so active and extensive that our imports of finished goods of this type are relatively small. In fact, we export about a million dollars' worth of leather manufactures a year, principally to the West Indies and Canada.

Paper. — Paper is vegetable fibre made into pulp, and then rolled into thin sheets and dried. Until within a few years its use was limited to the making of books, manuscript, wrappings, etc., but now innumerable uses have been found for it. The United States is the leading paper-producing nation, with Great Britain second, and Germany third in order. Rags, wood, straw, grass, and many kinds of fibre, are worked up into paper. Paper pulp moulded into shapes for ornamental work is used as a substitute for wood and metal. This material is called *papier-maché*. Articles are made from this by applying enormous hydrostatic pressure. *Papier-maché* is now much used in the manufacture of car-wheels, the core of which is made of this

substance. Thus made they are less brittle, and will outwear wheels of solid steel. The quality of paper depends upon the kind of fibre used. With the development of the art of paper-making in countries of commercial importance, the demand for paper-making material has become very great. The best paper is made from fibre that has been spun and woven, such as linen and cotton, and rags of these substances are of much economic value. Linen rags are especially valuable for making the finest and strongest paper. Other fibre, particularly that of wood, is employed for common paper. Poplar and spruce are the woods most used, but not to the exclusion of other soft woods. Wood-pulp is extensively made in Maine, New Hampshire, Vermont, New York, Michigan, and Pennsylvania, and a larger quantity of paper is made from this than from any other substance. It is also imported from Canada, Norway, Sweden, and Germany. Other fibres used in making the coarser kinds of paper are jute, hemp, and straw.

In 1894 rags, wood-pulp, and other paper-stock were imported into the United States to the value of over $3,000,000. As an export, paper was worth about $2,000,000 to the United States in 1894. Much of the fine paper manufactured in the United States is made in western Massachusetts.

Wine. — With the exception of raisins, wines and brandy are the only important products of vine-culture. From the oldest recorded time, all the territory bordering on the Mediterranean Sea has yielded the grape in finest varieties; but to-day this fruit is grown in all countries of the world that lie between 20° and 50° of latitude, north or south. In our own country, western New York and central Ohio yield a fine variety of this fruit. But our richest wine-producing section is middle and southern California. The grape is indigenous to the territory of the United States, but the finest California product is the result of graftings from European stock. Thus far, however, the wine of commerce is principally derived from Mediterranean countries, especially the western ones, and from the valleys of the Rhine and Danube. The United States imports wines to the value of nearly $8,000,000 a year, mainly from France, Germany, and Spain. Brandy comes almost wholly from France. The wines of Germany and Spain imported by us, about one-quarter of the whole, come usually in casks, while that from France, nearly three-quarters of the whole, is imported in bottles. The United States exports very little wine; the value of the annual shipment being about a quarter of a million dollars, and this almost entirely to other countries of our own continent. The Californian product of wine is such that in spite of the conservatism of trade, and of the opposition of interested importers, it must, by reason of its many excellences, eventually supplant the various European products in our own market. Sherry is the principal wine of Spain, Port of Portugal, Burgundy of France, and various white wines, known as Rhine wine, of Germany.

Italian and Hungarian wines have for some time been steadily increasing in commercial consequence; and the former are now largely sold to France, to make up for the decrease in the French supply occasioned by the ravages of the phylloxera.

VI. — MISCELLANEOUS COMMODITIES

Drugs and Chemicals. — The principal drugs of commerce are cinchona, opium, sulphur, soda, tartrate of potash, potash, and the "chloride" of lime.

Cinchona, or Peruvian bark, is one of the most important of drugs. It is obtained from several species of trees that are indigenous on the slopes of the Andes. These trees have been introduced into the West Indies, India, and Ceylon, and are now cultivated with such success that much of the world's supply of cinchona comes from these regions. Quinine is made from this bark, and is a trustworthy remedy in many cases of malarial fevers. Cinchona bark valued at over $300,000 is annually imported into the United States, and quinine to the value of $650,000.

Opium is the dried juice of poppy-heads. It is produced almost entirely in India, China, Persia, and Asia Minor. The medicinal properties of opium are very important; and, owing to the great value of the drug, more efforts are made to smuggle it into restricted countries than are made with almost any other article of commerce. The government of Great Britain holds the monopoly of the traffic in opium in India. Laudanum and morphine are made from opium; it is also an ingredient of paregoric and many other pharmaceutical preparations. The annual import of this drug into the United States reaches the value of nearly $2,000,000.

Sulphur, or brimstone, is a very common mineral, and is found chiefly in combination with other minerals. When found pure it is a product of volcanoes. Several rich deposits of sulphur occur in the United States, particularly in Alaska; but most of the world's supply comes from Sicily, and it is the most important mineral product of Italy. Its principal use is for making sulphuric acid, but it is also valuable in the manufacture of hard rubber and of gunpowder. As a constituent of iron pyrites, it is a large export of both Spain and Portugal. Our annual imports of sulphur amount to about $1,500,000, almost wholly from Sicily.

Soda is imported by us from Chili and Peru, where it chiefly occurs in the form of nitrate of soda, in which countries this salt is found in vast beds. From it is made the bulk of nitric acid, and it is also useful in the manufacture of fertilizers. Nitrate of sodium is familiarly known as Chili saltpetre, to distinguish it from nitrate of potassium. Carbonate of soda is extensively used in the manufactures of glass and soap.

Potash salts are also an important article of commerce. Nitrate of potassium, nitre, or saltpetre, is extensively imported from Peru. It is used mainly in the manufacture of gunpowder and of nitric acid. The value of nitrates annually imported is about $2,500,000. Tartrate of potassium, the "tartar," or "argol," of commerce, is a product of wine-manufacture, being deposited on the inside of wine-casks in a hard crust. It is, therefore, chiefly exported from wine-producing countries. We import crude tartar to the value of about $2,250,000, most of which comes from Italy and France. It is used in calico-printing and dyeing. By far the greater part of the potash of commerce, however, is the caustic potash used in the manufacture of soap and of alum.

Lime "chloride" is the most important substance used for bleaching and disinfecting purposes. The chief supplies of the world are derived from England, Germany, and Spain. Our own purchases of it, to the annual value of about $1,500,000, are almost wholly derived from England and Scotland.

Furs. — The skins of animals were formerly much used for clothing in countries where the winter climate is rigorous. But with the increase in skill in manufacturing cloth, and the growth of commerce between nations, cloth has superseded furs for general use as apparel among all peoples except those living in the coldest countries. Furs are worn in winter in Europe and America, not only for the comfort they give, but also to a greater extent for adornment. The skins of the fur-seal are the first in value in the fur-trade; and these come almost entirely from Bering Sea. The seal rookeries of this sea are controlled by the United States government, and the number of seals killed each year is limited by law so that these animals may be preserved from extinction. In their natural condition the skins are coarse and unsightly; but, by an elaborate process, the long hairs are plucked out, and the soft fur remaining is dyed either black or deep bronze. The method of treating the skins was long kept secret, and all skins were sent to London; but the process is now known elsewhere, and many skins are now plucked and dyed in the United States.

The squirrel-skins of commerce come almost entirely from Siberia, where these animals are killed in great numbers, particularly in the eastern part. Fox-skins, in the order of their value, are the black, silver-gray, blue, cross, white, and red. These skins come from British America and Siberia. Skins of the wolf, bear, and sable come from the same regions; the beaver and muskrat, from northern America; the rabbit, from Australia; the nutria, from the Plate regions of South America; and the lion and tiger, from southern Asia and from Africa. Sea-otter, now very rare, inhabit Bering Sea. The skin of the sea-otter sometimes brings three hundred dollars.

The annual value of the furs and skins exported from the United States is nearly $5,000,000. San Francisco is the leading seal-skin market; and London, Leipzig, and Nijni-Novgorod, are the chief fur-markets of Europe.

A close imitation of seal-skin made from silk is a common article of commerce, as it is much lighter than fur and nearly as warm.

Gums and Resins. — Gums and resins exist in great variety. The more important are the following: —

Amber is the fossilized resin of trees that once grew in northern Germany and The Netherlands and in parts of Siberia and North America. Most of the amber of commerce comes from northern Germany, where it is either dug from the earth or washed up by the sea. Amber has many uses, depending upon its quality and color. The chief uses are for articles of adornment and for making varnishes. Amber is found in Burmah, but the product is sold wholly in the adjoining countries.

Gum-Arabic is a resinous gum, gathered from several varieties of acacia. The

chief sources of this gum are the Barbary States and the Soudan in North Africa, Turkey, Asia Minor, Australia, and the East Indies. The finest qualities are used in making confectionery. Other and more important uses are in the manufactures for stiffening and giving lustre to cloth, for making paste, and for sizing.

Copal is a resinous gum found both in fossil form and exuding from trees. The chief sources of supply are the east and west coasts of Africa. It is obtained from the interior of Africa, but reaches the coast in trade. Copal also comes from the East Indies. This gum is extensively used in making varnishes and in calking ships. The fossil gum is the best.

Dextrine is artificial gum made from starch. There are several processes for making it. The uses for dextrine are similar to those of gum-arabic; and it has superseded gum-arabic to a considerable extent in the manufactures. It is used in giving the adhesive surface to labels, postage-stamps, and envelopes.

Kauri gum is similar to copal. All the kauri gum of commerce comes from New Zealand. It is found in fossil form, and also exuding from the kauri pine. The fossil gum is more valuable than the fresh gum. Kauri gum is used in making the better qualities of varnish and cheap imitations of amber adornments.

Shellac is a resinous incrustation formed on the bark of various kinds of trees by an insect called the lac. The shellac of commerce comes from India, China, Siam, and the East Indies. The supply is derived both from the forests and from artificial propagation. In the countries in which it is produced shellac is much used for making ornaments and trinkets; but in Europe and America its chief utility lies in the manufacture of varnishes and sealing-wax, and in stiffening hats. The lacquer-work of China and Japan is made of this substance.

Mastic is an exudation from the mastic shrub, grown chiefly in Spain, Portugal, and the Canary Islands, but to some extent in Italy, Greece, and Asia Minor. It is used principally in making varnish.

The numerous uses of *India-rubber*, or caoutchouc, have made it an important article of commerce. It is the gum of several varieties of tree that abound in Brazil and Central America. Two-thirds of the supply come from the basin of the Amazon River. Para, at the mouth of the river, is the greatest rubber-market in the world. A small amount is derived from the west coast of Africa. It is very elastic, and is used in articles where this characteristic is valued. It is also used extensively in making water-proof shoes and clothing. When heated, and incorporated with sulphur and other ingredients, it forms a hard substance known as "vulcanized" rubber. The latter is used in making a great variety of small articles. The manufacture of rubber is carried on more largely and to greater perfection in the United States than in any other country. In 1894 rubber and gutta-percha were imported into the United States to the value of about $16,000,000; the export of rubber goods amounted to $850,000.

Gutta-percha is a gum similar in many respects to rubber. It is softened by hot water and is easily wrought. The uses for gutta-percha are similar to those of caoutchouc, but more varied. It resists the action of water, and is a good non-conductor of electricity; hence the use of it as an insulating material for ocean cables

and parts of electrical instruments. The supply comes entirely from the East Indies.

Tar is obtained from two sources, coal and wood. Wood tar is obtained by extracting the pitch from pine-trees by heat. Tar is largely produced from the yellow pine of the South Atlantic states. In Europe it is produced mostly in Russia, Sweden, and Norway. It is much used as a preservative of wood.

Tragacanth is a gummy exudation from a shrub that grows in Asia Minor, Persia, India, and parts of Africa. It is easily dissolved in water, and is used in making lozenges, pills, and paste, in marbling paper, and in calico-printing.

Turpentine is a resinous liquid obtained from nearly all kinds of pine. It is made in Russia and Sweden, but the greatest amount is derived from the yellow pine of the South Atlantic states. Crude turpentine is distilled, and from it is produced spirit or oil of turpentine. The solid matter resulting from this distillation is the rosin of commerce. The annual value of the foreign trade in these resinous products to the United States is nearly $6,000,000.

Hops. — The blossoms of the hop-plant contain a bitter principle, essential to, and extensively used in, the making of beer and ale. Hops are raised chiefly in those countries where brewing is carried on; the leading hop-raising nations being Germany, England, The Netherlands, and Austria-Hungary. In the United States hops are grown in the states of New York and Washington. Our imports of hops fluctuate from $500,000 to $1,000,000 annually. They are mainly from Germany. In 1888 our total foreign trade in hops amounted to more than $2,000,000, and the trade in liquors in which hops are used to nearly as much more.

Ivory. — The ivory of commerce comes from the tusk of the elephant, of the walrus, and from vegetable ivory nuts. The elephant ivory is the finest quality. It comes principally from Africa, though a small amount is derived from southern Asia. The annual product of Africa is estimated at about 150,000 pounds, but the supply is decreasing. The elephants are killed in the interior of the continent; and the ivory finds its way to market by barter all along the coast, but chiefly on the west by way of the Congo.

Walrus ivory is of inferior quality, owing to a coarse-grained core through the centre of the tusk. The annual product does not reach 50,000 pounds. Fossil ivory, from the tusks of the extinct mammoth, is exported from Siberia; but it is stained and of poor quality. The manufacture of celluloid, or artificial ivory, is an important industry, particularly in the United States and France. When soft it is easily moulded into shape, and it has very generally superseded genuine ivory.

For small articles, particularly buttons, a palm-nut that grows in abundance in the northern part of South America is used. This nut possesses firm texture, and closely resembles ivory. It is easily worked when softened by hot water.

Lumber. — Trees are the most universally useful products of nature. They are used in building houses and ships, in making household utensils and ornaments, and more than any other substance as fuel. After the tree is felled, and the wood

is partly wrought, it is called lumber. In several countries the supply of wood is limited and lumber is imported.[1] In Europe the chief lumber-producing countries are Scandinavia, Germany, and Russia. But lumbering is not carried on in any of these countries to the extent that it is in the United States.

The forest area of the United States exceeds that of any other country, and wood-working is pursued more extensively in the United States than elsewhere. In 1894 the value of the lumber and manufactures of lumber exported from the United States was over $27,000,000. The imports of lumber and manufactures of lumber were valued at $18,154,000. Nearly three-quarters of this importation was of logs and lumber from Canada. Of the lumber exported, more was sent to the Argentine Republic and to Australia than to other countries; but the articles manufactured from wood were exported chiefly to the nations of Europe.

Soft wood of the various kinds of cone-bearing species forms most of the lumber of commerce. This includes *pine*, *hemlock*, and *spruce* from the United States and Canada, spruce from Norway, and pine from Germany. The most abundant and valuable pine-tree in the United States is the *yellow* or *southern pine*. Not only is the lumber valuable, but most of the turpentine of commerce, the resinous sap of the tree, comes from it.

Owing to its durability, *oak*, one of the toughest and strongest kinds of woods, is used in ship-building, in carriage-making, and in fine cabinet-work. Live-oak, that grows in the Southern States, is the best wood for ship-building purposes. Oak is exported from Spain and Portugal.

Teak, another kind of wood valuable in ship-building, grows in southern Asia and adjoining islands.

Redwood is plentiful in California, and some is exported. It is very durable, soft, and easily worked. It possesses a beautiful grain and color, and is susceptible of fine polish. It is used not only in building, but in interior finishing, for making shingles, and in cabinet-work.

Oregon pine, a species of fir, is exported from the Pacific slope, particularly from Oregon and Washington. It is used for all kinds of building-purposes. Owing to its elasticity it is much employed in ship-building. Most vessels built on the Pacific slope are made of this timber.

In Australia there are great forests of *jarrah*. This is similar to the redwood of California, and is rapidly making its way into commerce.

The *kauri pine* of New Zealand is used in all kinds of building, including ship-building.

Black walnut, used in ornamental and cabinet work, comes mostly from the valley of the Mississippi.

Maple abounds in the northern United States and Canada, and has grown into recent demand for flooring, cabinet-work, furniture-making, and other grades of fine work.

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[1] Australia, China, Japan, and Mexico draw from the United States largely for lumber, their native supplies being mainly in almost inaccessible regions.

Mahogany, a very heavy and costly timber, is used principally as veneer in the finest kinds of cabinet-work. This wood comes from Central America, Mexico, and the West Indies.

Red cedar, used in lead-pencil making, comes entirely from Florida. This wood also finds some use in cabinet-work.

Among other kinds of wood are *ebony*, from the east coast of Africa, used for fine cabinet-work; *rosewood* from Brazil, for veneer-work; *boxwood* from Spain and nearly all parts of the United States, for turning-purposes, carving, and engraving blocks; *chestnut* from the northern part of the United States, for cheap interior wood-finish.

Tobacco. — Tobacco is a plant native to the Americas. In the seventeenth century it was introduced into Europe, and its use spread with great rapidity in spite of the opposition of church and state. The cultivation of the plant has now extended to many countries, but the best tobacco still comes from the New World. The annual production of the world is over 750,000 tons, and more than a quarter of this amount is raised in the United States.

Tobacco is an article of great money value to the world; as it is heavily taxed in every country, and in France, Austria, Italy, and Spain the sale of it is a government monopoly. It has been exported from the United States to the average value of nearly $25,000,000 a year for the past thirty years.

The leading tobacco regions outside of the United States are Cuba, the Dutch East Indies, India, Brazil, and Turkey. Tobacco stands among the important articles of commerce of Europe and America. Our import of leaf-tobacco has a value of about $10,000,000 a year from Holland and Cuba; and of manufactured tobacco about $3,500,000 from Cuba.

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